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NEWS	1		Web Page URLs for STN Seminar Schedule - N. America
NEWS	2	Sep 17	IMSworld Pharmaceutical Company Directory name change to PHARMASEARCH
NEWS	3	Oct 09	Korean abstracts now included in Derwent World Patents Index
NEWS	4	Oct 09	Number of Derwent World Patents Index updates increased
NEWS	5	Oct 15	Calculated properties now in the REGISTRY/ZREGISTRY File
NEWS	6	Oct 22	Over 1 million reactions added to CASREACT
NEWS	7	Oct 22	DGENE GETSIM has been improved
NEWS	8	Oct 29	AAASD no longer available
NEWS	9	Nov 19	New Search Capabilities USPATFULL and USPAT2
NEWS	10	Nov 19	TOXCENTER(SM) - new toxicology file now available on STN
NEWS	11	Nov 29	COPPERLIT now available on STN
NEWS	12	Nov 29	DWPI revisions to NTIS and US Provisional Numbers
NEWS	13	Nov 30	Files VETU and VETB to have open access
NEWS	14	Dec 10	WPINDEX/WPIDS/WPIX New and Revised Manual Codes for 2002
NEWS	15	Dec 10	DGENE BLAST Homology Search
NEWS	16	Dec 17	WELDASEARCH now available on STN
NEWS	17	Dec 17	STANDARDS now available on STN
NEWS	18	Dec 17	New fields for DPCI
NEWS	19	Dec 19	CAS Roles modified
NEWS	20	Dec 19	1907-1946 data and page images added to CA and CAplus

NEWS EXPRESS August 15 CURRENT WINDOWS VERSION IS V6.0c,
CURRENT MACINTOSH VERSION IS V6.0 (ENG) AND V6.0J (JP),
AND CURRENT DISCOVER FILE IS DATED 07 AUGUST 2001

NEWS HOURS STN Operating Hours Plus Help Desk Availability
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Cynthia Hamilton

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PRIMARY EXAMINER

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***** STN Columbus *****

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=> file ca

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FILE COVERS 1907 - 17 Jan 2002 VOL 136 ISS 4
FILE LAST UPDATED: 17 Jan 2002 (20020117/ED)

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=> s pfeiffer?/au and calixarene

5451 PFEIFFER?/AU

3242 CALIXARENE

L1 2 PFEIFFER?/AU AND CALIXARENE

=> d all 1-2

L1 ANSWER 1 OF 2 CA COPYRIGHT 2002 ACS

AN 130:296838 CA

TI Synthesis of chiral calix[n]arenes. Part 2: Synthesis of new chiral calix[n]arenes based on (p-hydroxyphenyl)menthone

AU Soi, Antonio; Pfeiffer, Jens; Jauch, Johann; Schurig, Volker

CS Institut fur Organische Chemie, Universitat Tübingen, Tübingen, D-72076, Germany

SO Tetrahedron: Asymmetry (1999), 10(1), 177-182

CODEN: TASYE3; ISSN: 0957-4166

PB Elsevier Science Ltd.

DT Journal

LA English

CC 30-10 (Terpenes and Terpenoids)

Section cross-reference(s): 25

OS CASREACT 130:296838

AB The synthesis of new chiral calix[n]arenes, related to Corey's phenyl-menthol, is described. Starting from enantiomerically pure (R)-(+)-pulegone, calix[n]arenes with different ring sizes could be obtained in reasonable yield.

ST bromobutoxybenzene prepn conjugate addn pullegone; calixarene chiral prepn

IT Metacyclophanes

RL: SPN (Synthetic preparation); PREP (Preparation)

(chiral; synthesis of new chiral calix[n]arenes based on (p-hydroxyphenyl)menthone)

IT Chiral synthons
(synthesis of new chiral calix[n]arenes based on (p-hydroxyphenyl)menthone)

IT 89-82-7, (R)-(+)-Pulegone 106-41-2, 4-Bromophenol 115-11-7, Isobutene, reactions
RL: RCT (Reactant)
(synthesis of new chiral calix[n]arenes based on (p-hydroxyphenyl)menthone)

IT 60876-70-2P, 4-Bromophenol tert-butyl ether 223429-33-2P 223429-34-3P 223429-35-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(synthesis of new chiral calix[n]arenes based on (p-hydroxyphenyl)menthone)

IT 223429-36-5P 223429-37-6P 223429-38-7P 223429-39-8P
RL: SPN (Synthetic preparation); PREP (Preparation)
(synthesis of new chiral calix[n]arenes based on (p-hydroxyphenyl)menthone)

RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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- (8) Grosenick, H; J Chromatogr 1997, VA(761), P181
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- (13) Munch, J; Org Synth 1989, V68, P243
- (14) Ort, O; Org Synth 1987, V65, P203 CA
- (15) Shinkai, S; Tetrahedron 1993, V49, P8933 CA

L1 ANSWER 2 OF 2 CA COPYRIGHT 2002 ACS

AN 128:288238 CA

TI Systematic studies of functionalized calixarenes as negative tone electron beam resist

AU Prins, F. E.; Pfeiffer, J.; Raible, S.; Kern, D. P.; Schurig, V.

CS Institut Angewandte Physik, Universitat Tubingen, Tubingen, 72076, Germany

SO Microelectron. Eng. (1998), 41/42, 359-362

CODEN: MIENEF; ISSN: 0167-9317

PB Elsevier Science B.V.

DT Journal

LA English

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

AB We present a systematic study on properties of calix[n]arenes as a high resolu. neg. tone electron beam resist. From expts. changing the ring sizes of the calix[n]arenes with n=4,6,8 as well as the functionalization of the arenes we conclude that electron beam irradiation causes the arenes to break up and link to other arenes or functionalizing groups. This is confirmed by exposing resorcin[4]arene. We demonstrate that this material also shows neg. tone high resolu. resist features, and patterns are transferred into silicon.

ST calixarene neg tone electron beam resist

IT Electron beam lithography

Electron beam resists

(systematic studies of functionalized calixarenes as neg. tone electron beam resist)

IT 60705-62-6, p-tert-Butylcalix[4]arene 68971-82-4, p-tert-Butylcalix[8]arene 78092-53-2, p-tert-Butylcalix[6]arene 96107-95-8 155401-93-7 205929-11-9

RL: PRP (Properties)

(systematic studies of functionalized calixarenes as neg. tone electron beam resist)

=> FIL STNGUIDE

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

8.64

8.79

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

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TOTAL

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TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

0.00

8.79

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

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DICTIONARY FILE UPDATES: 22 JAN 2002 HIGHEST RN 385365-97-9

TSCA INFORMATION NOW CURRENT THROUGH July 7, 2001

Please note that search-term pricing does apply when
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Crossover limits have been increased. See HELP CROSSOVER for details.

Calculated physical property data is now available. See HELP PROPERTIES
for more information. See STNote 27, Searching Properties in the CAS
Registry File, for complete details:

<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

=> s calix and arene

240 CALIX

271 ARENE

L2 220 CALIX AND ARENE

=> file caplus

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

8.32

17.11

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE

TOTAL

ENTRY

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CA SUBSCRIBER PRICE

0.00

-1.18

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FILE LAST UPDATED: 21 Jan 2002 (20020121/ED)

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L1 FILE 'CA' ENTERED AT 10:34:40 ON 23 JAN 2002
2 S PFEIFFER?/AU AND CALIXARENE

FILE 'STNGUIDE' ENTERED AT 10:35:40 ON 23 JAN 2002

L2 FILE 'REGISTRY' ENTERED AT 10:38:03 ON 23 JAN 2002
220 S CALIX AND ARENE

FILE 'CAPLUS' ENTERED AT 10:38:37 ON 23 JAN 2002

=> s l2 and photo?

2000 L2
1101037 PHOTO?
L3 97 L2 AND PHOTO?

=> s l3 and (e beam or electron beam)

1581561 E
362171 BEAM
5737 E BEAM
(E(W) BEAM)
1084696 ELECTRON
362171 BEAM
109885 ELECTRON BEAM
(ELECTRON(W) BEAM)
L4 2 L3 AND (E BEAM OR ELECTRON BEAM)

=> d all 1-2

L4 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2002 ACS
AN 1998:215364 CAPLUS
DN 128:288230
TI Resolution of calixarene resist under low energy electron irradiation
AU Fujita, J.; Ohnishi, Y.; Manako, S.; Ochiai, Y.; Nomura, E.; Matsui, S.
CS Fundamental Research Laboratories, NEC Corporation, Tsukuba, 305, Japan
SO Microelectron. Eng. (1998), 41/42, 323-326
CODEN: MIENEF; ISSN: 0167-9317
PB Elsevier Science B.V.
DT Journal
LA English
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
AB The resoln. and sensitivity of calixarene resists in relation to incident electron energy were studied. While the sensitivity of the resists was varied in compliance with Bethe theory for the changes of the electron energy, resoln. of the resists in terms of the min. dot size, shows almost the same value of about 10 nm for each electron energy. A Monte Carlo simulation suggests the electron dose at the edge of the dot pattern was only one hundredth of that at the center of the **electron beam**. This means the major factor in limiting the resoln. in calixarene resists was not the **electron beam** profile, but other factors such as a limit due to development processes.
ST calixarene resist low energy electron irradiation; **photoresist** Monte Carlo simulation dot pattern
IT **Electron beam** resists
Photoresists
Physicochemical simulation
(resoln. of calixarene resist under low energy electron irradiation.)
IT **124006-38-8**, 5,11,17,23,19,35-Hexachloromethyl-37,38,39,40,41,42-hexamethoxycalix-[6]arene **141137-71-5**, 5,11,17,23,29,35-Hexamethyl-37,38,39,40,41,42-hexaacetoxycalix-[6]arene
RL: PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(resoln. of calixarene resist under low energy electron irradiation.)

L4 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2002 ACS
AN 1992:601700 CAPLUS
DN 117:201700
TI Film properties and applications of hexaacetate p-methylcalix[6]arene
AU Wamme, Naoko; Ohnishi, Yoshitake
CS Fundam. Res. Lab., NEC Corp., Tsukuba, 305, Japan
SO Polym. Mater. Sci. Eng. (1992), 67, 451-2
CODEN: PMSDGG; ISSN: 0743-0515
DT Journal
LA English
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
AB A simple calixarene deriv., p-methylcalix[6]arene or 5, 11, 17, 23, 29, 35-hexamethyl-37, 38, 39, 40, 41, 42-hexaacetoxycalix[6]arene (MC6AOAc) was synthesized. This is thermally stable up to 320.degree., both chem. and mech. It shows no flow or softening. Its high heat resistivity makes it suitable for use in semiconductor processes. Films of calixarenes are made from solns. by spin coat. For example, from MC6AOAc, films with 10 to 800 nm thick are made by varying concn. and spin speed (rpm).
ST methylacetoxycalixarene resist lithog; calixarene acetate deriv neg electron resist
IT Lithography
(hexamethyl-hexaacetoxycalix[6]arene as **electron-beam** or ion-beam sensitive material for)
IT Resists
(hexamethyl-hexaacetoxycalix[6]arene as, synthesis and characterization of)
IT 5284-79-7
RL: USES (Uses)
(**photoactive** agent, in **photoresist** compn. contg. hexamethyl-hexaacetoxycalix[6]arene)

IT 141137-71-5P, 5,11,17,23,29,35-Hexamethyl-37,38,39,40,41,42-
hexaacetoxycalix[6]arene
RL: PREP (Preparation)
(synthesis and film properties and applications of, in **electron**
-beam or ion-beam lithog.)

=> d his

(FILE 'HOME' ENTERED AT 10:34:31 ON 23 JAN 2002)

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L1 2 S PFEIFFER?/AU AND CALIXARENE

FILE 'STNGUIDE' ENTERED AT 10:35:40 ON 23 JAN 2002

FILE 'REGISTRY' ENTERED AT 10:38:03 ON 23 JAN 2002

L2 220 S CALIX AND ARENE

FILE 'CAPLUS' ENTERED AT 10:38:37 ON 23 JAN 2002

L3 97 S L2 AND PHOTO?

L4 2 S L3 AND (E BEAM OR ELECTRON BEAM)

=> s 12 and hydroxy

2000 L2

300596 HYDROXY

L5 110 L2 AND HYDROXY

=> s 13 and hydroxy

300596 HYDROXY

L6 3 L3 AND HYDROXY

=> s 16 not 14

L7 3 L6 NOT L4

=> d all 1-3

L7 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2002 ACS

AN 2000:522638 CAPLUS

DN 133:112454

TI Chromic compound having calix arene and spiropyran structures

IN Kawanishi, Yuji; Zhou, Jinwei

PA Agency for Industrial Science and Technology, Japan

SO Jpn. Tokkyo Koho, 7 pp.

CODEN: JTXFF

DT Patent

LA Japanese

IC ICM C07D491-107

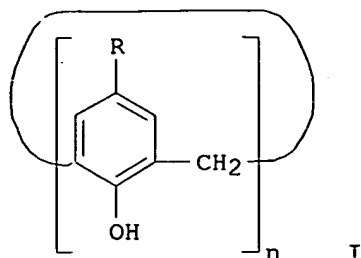
ICS C09K009-02

CC 74-9 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)

Section cross-reference(s): 28

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	JP 3032825	B1	20000417	JP 1999-39147	19990217
	JP 2000239278	A2	20000905		
OS	MARPAT 133:112454				
GI					



AB The invention relates to chromic compd. I (R = alkyl; n = 4-12 integer), wherein the **hydroxy** hydrogen or/and hydrogen on the benzene ring of I is substituted with a **photochromic** or thermochromic spiropyran compd. residue. The chromic characteristics of the chromic compd. is artificially controlled.

ST chromic compd calix arene spiropyran

IT **Photochromic** materials

Thermochromic materials

(chromic compd. having calix arene and spiropyran structures)

IT Heterocyclic compounds

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(fused; chromic compd. having calix arene and spiropyran structures)

IT 282718-92-7P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(chromic compd. having calix arene and spiropyran structures)

IT 55779-26-5 **154204-25-8**

RL: RCT (Reactant)

(chromic compd. having calix arene and spiropyran structures)

L7 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2002 ACS

AN 1999:624949 CAPLUS

DN 132:58311

TI A non-covalent assembly for electron transfer based on a calixarene-porphyrin conjugate: tweezers for a quinone

AU Arimura, Takashi; Ide, Seiji; Sugihara, Hideki; Murata, Shigeo; Sessler, Jonathan L.

CS COE Laboratory, National Institute of Materials and Chemical Research, Tsukuba, 305-8565, Japan

SO New J. Chem. (1999), 23(10), 977-979

CODEN: NJCHE5; ISSN: 1144-0546

PB Royal Society of Chemistry

DT Journal

LA English

CC 78-7 (Inorganic Chemicals and Reactions)

Section cross-reference(s): 73

AB The synthesis and characterization are reported of a new supramol.

assembly, a calix[4]arene-substituted Zn(II) metalloporphyrin and

benzoquinone, wherein **photoinduced** electron transfer through

noncovalent interactions are probed. Two phenolic **hydroxy**

groups of the calix[4]arene serve as tweezers to capture the benzoquinone

by two-point hydrogen-bonding fixation. While hydrogen bonding

interactions bring donor and acceptor into close contact, the obsd.

electron transfer process is thought to result from a through-bond

(including H bonds) pathway.

ST calixarene porphyrin zinc conjugate prepn quinone interaction; hydrogen

bond quinone calixarene porphyrin zinc conjugate; electron transfer

calixarene porphyrin conjugate quinone assembly; fluorescence quenching

calixarene porphyrin conjugate quinone assembly

IT Hydrogen bond

Photoinduced electron transfer

(non-covalent assembly for **photoinduced** electron transfer

based on calixarene-porphyrin zinc conjugate contg. hydroxyl tweezers

for quinone)

IT Metacyclophanes

RL: PEP (Physical, engineering or chemical process); SPN (Synthetic

preparation); PREP (Preparation); PROC (Process)
(non-covalent assembly for **photoinduced** electron transfer.
based on calixarene-porphyrin zinc conjugate contg. hydroxyl tweezers
for quinone)

IT Fluorescence quenching
(of non-covalent assembly of calixarene-porphyrin zinc conjugate contg.
hydroxyl tweezers for quinone)

IT Metalloporphyrins
RL: PEP (Physical, engineering or chemical process); SPN (Synthetic
preparation); PREP (Preparation); PROC (Process)
(zinc; non-covalent assembly for **photoinduced** electron
transfer based on calixarene-porphyrin zinc conjugate contg. hydroxyl
tweezers for quinone)

IT 100-52-7, Benzaldehyde, reactions 92415-30-0 **162330-38-3**
RL: RCT (Reactant)
(for prepn. of calixarene-porphyrin zinc conjugate)

IT 106-51-4, p-Quinone, processes
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(hydrogen bonding with calixarene-porphyrin zinc conjugate contg.
hydroxyl tweezers as non-covalent assembly for **photoinduced**
electron transfer studies)

IT 252740-05-9P
RL: PEP (Physical, engineering or chemical process); SPN (Synthetic
preparation); PREP (Preparation); PROC (Process)
(prepn. and fluorescence quenching of)

IT 252740-04-8P
RL: PEP (Physical, engineering or chemical process); SPN (Synthetic
preparation); PREP (Preparation); PROC (Process)
(prepn. as non-covalent assembly with hydrogen-bonded quinone for
photoinduced electron transfer studies)

RE.CNT 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

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Linked, Supramolecular Model Systems in Comprehensive Supramolecular
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- (18) Turro, N; Modern Molecular Photochemistry 1991, P246
- (19) Whitlock, B; J Am Chem Soc 1990, V112, P3910 CAPLUS
- (20) Young, R; J Am Chem Soc 1985, V107, P898 CAPLUS

L7 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2002 ACS

AN 1989:76754 CAPLUS

DN 110:76754

TI Phenolic calixarenes as **photostabilizers** of polymers and organic
materials

IN Goermar, Gerhard; Seiffarth, Klaus; Bachmann, Joerg; Schulz, Manfred;
Raedler, Klaus Peter

PA VEB Leuna-Werke "Walter Ulbricht", Ger. Dem. Rep.

SO Ger. (East), 5 pp.

CODEN: GEXXA8

DT Patent

LA German

IC ICM C08K005-15
CC 37-6 (Plastics Manufacture and Processing)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DD 254739	A1	19880309	DD 1986-296981	19861203
OS	MARPAT 110:76754				
AB	Phenolic calixarenes (d.p. 3-8), optionally bearing hydrocarbyl groups para to the OH group, treated with H2O2, hydroperoxides, or peracids, are photostabilizers for polymers. Refluxing 1 g tetra-4-tert-butyltetra-1-hydroxycalix(4)arene and 5 g tert-BuOOH in 30 mL PhCl for 24 h gave 490 mg oxidn. product (I) whose IR spectrum showed CO and OH peaks. Low-d. polyethylene contg. 0.3% I required 1150 h Xenotest exposure for the extinction coeff. of the CO band (1720 cm-1) of the IR spectrum to reach 0.1; vs. 450 without I.				
ST	antioxidant light stabilizer polymer; calixarene oxidized stabilizer polymer; polyethylene antioxidant calixarene oxidized; peroxide oxidn calixarene; hydroperoxide oxidn calixarene; peracid oxidn calixarene				
IT	Antioxidants Light stabilizers (oxidized phenolic calixarenes, for polymers)				
IT	Hydroperoxides RL: RCT (Reactant) (oxidn. by, of phenolic calixarenes for photooxidn. stabilizers for polymers)				
IT	Polyamides, uses and miscellaneous Polyesters, uses and miscellaneous Polymers, uses and miscellaneous RL: USES (Uses) (photooxidn. stabilizers for, oxidized phenolic calixarenes as)				
IT	Cyclophanes RL: USES (Uses) (meta-, hydroxy , oxidized, photooxidn. stabilizers for polymers)				
IT	Alkenes, polymers RL: USES (Uses) (polymers, photooxidn. stabilizers for, oxidized phenolic calixarenes as)				
IT	74-85-1D, Ethylene, polymers with .alpha.-olefins RL: USES (Uses) (linear low-d., photooxidn. stabilizers for, oxidized phenolic calixarenes as)				
IT	75-91-2, tert-Butylhydroperoxide 7722-84-1, Hydrogen peroxide, reactions RL: RCT (Reactant) (oxidn. by, of phenolic calixarenes for photooxidn. stabilizers for polymers)				
IT	9002-88-4 9003-56-9 RL: USES (Uses) (photooxidn. stabilizers for, oxidized phenolic calixarenes as)				
IT	60705-62-6D, oxidized 68971-82-4D, oxidized 78092-53-2D, oxidized RL: USES (Uses) (photooxidn. stabilizers, for polymers)				

=> d his

(FILE 'HOME' ENTERED AT 10:34:31 ON 23 JAN 2002)

FILE 'CA' ENTERED AT 10:34:40 ON 23 JAN 2002

L1 2 S PFEIFFER?/AU AND CALIXARENE

FILE 'STNGUIDE' ENTERED AT 10:35:40 ON 23 JAN 2002

FILE 'REGISTRY' ENTERED AT 10:38:03 ON 23 JAN 2002

L2 220 S CALIX AND ARENE

FILE 'CAPLUS' ENTERED AT 10:38:37 ON 23 JAN 2002

L3 97 S L2 AND PHOTO?
L4 2 S L3 AND (E BEAM OR ELECTRON BEAM)
L5 110 S L2 AND HYDROXY
L6 3 S L3 AND HYDROXY
L7 3 S L6 NOT L4

=> s 13 not 17 not 14

L8 92 L3 NOT L7 NOT L4

=> s 18 and chem? (5a)ampli?

2105409 CHEM?

267070 AMPLI?

4183 CHEM? (5A)AMPLI?

L9 4 L8 AND CHEM? (5A)AMPLI?

=> d all 1-4

L9 ANSWER 1 OF 4 CAPLUS COPYRIGHT 2002 ACS

AN 1999:744383 CAPLUS

DN 132:7560

TI Acid-decomposable group-containing calixarenes, calixresorcinarenes, and
photosensitive composition for resist

IN Nishikubo, Tadaomi; Kameyama, Atsushi; Ota, Yoshihisa

PA JSR Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 15 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C07C043-235

ICS C07C069-33; C07F007-18; G03F007-039

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)

Section cross-reference(s): 25

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	JP 11322656	A2	19991124	JP 1998-146597	19980511
OS	MARPAT 132:7560				
GI	For diagram(s), see printed CA Issue.				
AB	The compn. contains .gtoreq.1 calix(resorcin)arenes I (R1, R2 = H, C1-5 alkyl; R3 = H, O2CBu-t, SiMe3, cyclohexenyl; n = 1-3; m = 4-12) and a photo-acid generator. The compn. is useful as pos.-working chem. amplified resists.				
ST	calixarene calixresorcinarene photosensitive compn resist; acid decomposable calixarene calixresorcinarene photoresist				
IT	Positive photoresists (acid-decomposable group-contg. calixarenes or calixresorcinarenes for photoresists)				
IT	Metacyclophanes RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (calixarenes; acid-decomposable group-contg. calixarenes or calixresorcinarenes for photoresists)				
IT	108-46-3, 1,3-Benzenediol, reactions 123-63-7 1521-51-3, 3-Bromocyclohexene 68971-82-4 , p-tert-Butylcalix(8)arene 250715-27-6 250715-28-7, p-Methylcalix(7)arene 250715-30-1, p-Methylcalix(8)arene RL: RCT (Reactant) (acid-decomposable group-contg. calixarenes or calixresorcinarenes for photoresists)				
IT	65338-98-9P, Calix[4]resorcinarene 68971-83-5P 160399-38-2P 250715-26-5P 250715-31-2P 250715-32-3P 250715-33-4P 250715-34-5P 250715-35-6P 250715-36-7P 250715-37-8P 250715-39-0P 250715-40-3P				

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(acid-decomposable group-contg. calixarenes or calixresorcinarenes for photoresists)

L9 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2002 ACS

AN 1999:498652 CAPLUS

DN 131:163357

TI Positive-working **chemical amplification**

photosensitive resin composition and resist image formation

IN Kato, Koji; Hashimoto, Masahiro; Kasuya, Kei; Hashimoto, Michiaki

PA Hitachi Chemical Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G03F007-039

ICS G03F007-033; H01L021-027

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 38

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11218925	A2	19990810	JP 1998-17617	19980130

OS MARPAT 131:163357

GI For diagram(s), see printed CA Issue.

AB The compn. contains (A) an alkali-sol. water-sol. resin, (B) an acid generating compd. by active chem. beam radiation, and (C) a phenol compd. I (X, Y = H, OH; R1 = C1-5 alkyl, C1-5 alkoxy; R2 = H, C1-5 alkyl, C1-5 alkoxy, Ph; R3 = H, acid-decomposable group; n = 4-8 integer). The method involves irradiating a film comprising the compn. with active chem. beam and developing. The compn. shows high soly. and excellent resoln., heat resistance, and sensitivity.

ST **photoresist** pos working image formation; alkali sol resin

photoresist heat resistance; **chem amplification**

photosensitive resin **photoimaging**

IT Phenolic resins, uses

RL: TEM (Technical or engineered material use); USES (Uses)
(novolak, cresol-based; pos.-working **chem.**

amplification photosensitive compn. contg. phenol cyclic compd. for image formation)

IT **Photoimaging** materials

Positive **photoresists**

(pos.-working **chem. amplification**

photosensitive compn. contg. phenol cyclic compd. for image formation)

IT 237394-96-6P 237394-97-7P

RL: IMF (Industrial manufacture); MOA (Modifier or additive use); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(pos.-working **chem. amplification**

photosensitive compn. contg. phenol cyclic compd. for image formation)

IT 27029-76-1P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(pos.-working **chem. amplification**

photosensitive compn. contg. phenol cyclic compd. for image formation)

IT 109-92-2

RL: RCT (Reactant)

(pos.-working **chem. amplification**

photosensitive compn. contg. phenol cyclic compd. for image formation)

IT 60705-62-6P 74568-07-3P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(pos.-working **chem. amplification**

photosensitive compn. contg. phenol cyclic compd. for image formation)
 IT 87-66-1, Pyrogallol 594-44-5, Ethanesulfonyl chloride 9016-83-5, CN 19 134335-36-7, Pyrogallol ethanesulfonate
 RL: TEM (Technical or engineered material use); USES (Uses)
 (pos.-working chem. amplification
 photosensitive compn. contg. phenol cyclic compd. for image formation)

L9 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2002 ACS
 AN 1998:428006 CAPLUS
 DN 129:154688
 TI Positive-working **chemical amplification**-type
 photosensitive resin compositions and manufacture of resist images using the same with high sensitivity, resolution, and heat resistance
 IN Kato, Koji; Hashimoto, Masahiro; Hashimoto, Michiaki
 PA Hitachi Chemical Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 8 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM G03F007-039
 ICS C08L061-10; G03F007-004; H01L021-027
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10177249	A2	19980630	JP 1997-210286	19970805
PRAI	JP 1996-275668		19961018		
OS	MARPAT 129:154688				
GI	For diagram(s), see printed CA Issue.				
AB	The title compns. comprise (A) resins sol. in aq. alkali solns.; (B) polyphenols I (R1 = H, C1-5 alkyl, alkoxy; R2 = H, C1-5 alkyl, alkoxy, phenyl; n = 4-8); (C) compds. generating acids upon active chem. beam irradiation; and (D) compds. having pendent group contg. acid-decomposable group improving soly. in aq. alkali solns. by acid catalyzed reaction.				
ST	pos working chem amplification photoresist pattern; polyphenol pos working chem amplification photoresist				
IT	Photoresists (pos.-working chem. amplification-type photosensitive resin compns. and manuf. of resist images using the same with high sensitivity, resolu., and heat resistance)				
IT	Phenolic resins, preparation RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (pos.-working chem. amplification-type photosensitive resin compns. and manuf. of resist images using the same with high sensitivity, resolu., and heat resistance)				
IT	60288-40-6P, Trimethylsulfonium trifluoromethanesulfonate RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses) (pos.-working chem. amplification-type photosensitive resin compns. and manuf. of resist images using the same with high sensitivity, resolu., and heat resistance)				
IT	110-87-2DP, 3,4-Dihydro-2H-pyran, reaction products with reaction products with poly(vinylphenol) 24979-70-2DP, Poly(p-vinylphenol), reaction products with dihydropyran 27029-76-1P, m-Cresol-p-cresol-formaldehyde copolymer 60705-62-6P 74568-07-3P 197861-57-7P RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (pos.-working chem. amplification-type photosensitive resin compns. and manuf. of resist images using the same with high sensitivity, resolu., and heat resistance)				
IT	9016-83-5, CN-19 RL: POF (Polymer in formulation); TEM (Technical or engineered material				

use); USES (Uses)

(pos.-working **chem. amplification-type**

photosensitive resin compns. and manuf. of resist images using the same with high sensitivity, resoln., and heat resistance)

IT 50-00-0, Formaldehyde, reactions 98-54-4, p-tert-Butylphenol 106-44-5, p-Cresol, reactions 2181-42-2, Trimethylsulfonium iodide 2923-28-6, Silver trifluoromethanesulfonate

RL: RCT (Reactant)

(pos.-working **chem. amplification-type**

photosensitive resin compns. and manuf. of resist images using the same with high sensitivity, resoln., and heat resistance)

L9 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2002 ACS

AN 1998:277408 CAPLUS

DN 129:10630

TI Positive-working **chemical amplification-type**

photosensitive resin composition containing polyphenols and method for manufacturing resist images

IN Kato, Koji; Hashimoto, Masahiro; Hashimoto, Michiaki

PA Hitachi Chemical Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

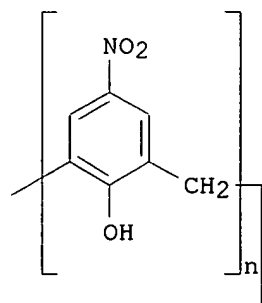
IC ICM G03F007-039

ICS G03F007-004; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10115926	A2	19980506	JP 1997-210284	19970805
PRAI	JP 1996-221938		19960823		
OS	MARPAT 129:10630				
GI					



AB A pos.-type **chem. amplification-series**

photosensitive resin compn. contains (a) a resin sol. in aq. alkali soln., (b) polynitrophenols (calixarene) (I; n = 4-8), (c) a compd. generating an acid upon irradiation with active chem. ray, and (d) a compd. possessing on the side chain, a group decomposable by acid which increases soly. in aq. alkali soln. by acid-catalyzed reaction. The content of low-mol. wt. component having mol. wt. $\leq 2,000$ as polystyrene in the above compn. is ≤ 10 wt.%. Also claimed is a method for prepg. resist images, in which the coating of above resin compn. is irradiated with active chem. ray and then developed. The compn. provides resist patterns of good resoln. and shows high sensitivity, high degree of resoln., and high heat resistance and is used for microprocessing of semiconductor devices.

ST pos working **photoresist** alkali sol; semiconductor device manuf

photoresist; polyphenol **photoresist chem**

amplification photoresist; calixarene pos working

photoresist
IT Positive photoresists
Semiconductor devices
(pos.-working chem. amplification-type
photosensitive resin compn. contg. polyphenols and method for
manufg. resist images)

IT Metacyclophanes
Novolaks
RL: SPN (Synthetic preparation); TEM (Technical or engineered material
use); PREP (Preparation); USES (Uses)
(pos.-working chem. amplification-type
photosensitive resin compn. contg. polyphenols and method for
manufg. resist images)

IT 50-00-0, Formaldehyde, reactions 98-54-4 24979-70-2,
Poly(p-vinylphenol)
RL: RCT (Reactant)
(pos.-working chem. amplification-type
photosensitive resin compn. contg. polyphenols and method for
manufg. resist images)

IT 60705-62-6P 68971-82-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(pos.-working chem. amplification-type
photosensitive resin compn. contg. polyphenols and method for
manufg. resist images)

IT 24979-70-2DP, Poly(p-vinylphenol), tetrahydropyranyl-substituted
27029-76-1P, m-Cresol-p-cresol-formalin copolymer 60288-40-6P,
Trimethylsulfonium trifluoromethanesulfonate 109051-62-9P
109081-46-1P
RL: SPN (Synthetic preparation); TEM (Technical or engineered material
use); PREP (Preparation); USES (Uses)
(pos.-working chem. amplification-type
photosensitive resin compn. contg. polyphenols and method for
manufg. resist images)

IT 9016-83-5, CN 19
RL: TEM (Technical or engineered material use); USES (Uses)
(pos.-working chem. amplification-type
photosensitive resin compn. contg. polyphenols and method for
manufg. resist images)

=> d his

(FILE 'HOME' ENTERED AT 10:34:31 ON 23 JAN 2002)

FILE 'CA' ENTERED AT 10:34:40 ON 23 JAN 2002

L1 2 S PFEIFFER?/AU AND CALIXARENE

FILE 'STNGUIDE' ENTERED AT 10:35:40 ON 23 JAN 2002

FILE 'REGISTRY' ENTERED AT 10:38:03 ON 23 JAN 2002

L2 220 S CALIX AND ARENE

FILE 'CAPLUS' ENTERED AT 10:38:37 ON 23 JAN 2002

L3 97 S L2 AND PHOTO?

L4 2 S L3 AND (E BEAM OR ELECTRON BEAM)

L5 110 S L2 AND HYDROXY

L6 3 S L3 AND HYDROXY

L7 3 S L6 NOT L4

L8 92 S L3 NOT L7 NOT L4

L9 4 S L8 AND CHEM? (5A)AMPLI?

=> s 18 not 19

L10 88 L8 NOT L9

=> s 110 and glycoluril

355 GLYCOLURIL

L11 0 L10 AND GLYCOLURIL

=> s 110 and crosslink?

206894 CROSSLINK?

L12 3 L10 AND CROSSLINK?

=> d all 1-3

L12 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2002 ACS

AN 2001:663120 CAPLUS

DN 136:6399

TI Synthesis and **photochemical** reaction of high performance UV curing oligomers

AU Nishikubo, Tadatomi; Kameyama, Atsushi

CS Department of Applied Chemistry, Faculty of Engineering, Kanagawa University, Kanagawa-ku, Yokohama, 221-8686, Japan

SO Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (2001), 42(2), 722-723

CODEN: ACPPAY; ISSN: 0032-3934

PB American Chemical Society, Division of Polymer Chemistry

DT Journal; (computer optical disk)

LA English

CC 35-4 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 37

AB Calixarene derivs. contg. (meth)acrylate, vinyl ether, propargyl ether, oxetane, oxirane, or spiro ortho ester groups were synthesized by reaction of calixarenes with (meth)acrylic acid derivs., vinyl ether compds., propargyl bromide, oxetane derivs., epibromohydrin, and spiro ortho ester derivs. The calixarene derivs. contg. **photoreactive** groups had excellent thermal stability and high **photochem.** reactivity. The calixarene derivs. are of interest for UV curing systems, e.g., inks, coatings, solder masks, adhesives, and microelectronics uses.

ST calixarene acrylate prepn **photochem** reactivity UV curing; vinyl oxetane oxirane calixarene prepn **photopolymn**; cationic **photopolymn** reactivity spiro orthoester calixarene

IT Metacyclophanes

RL: CAT (Catalyst use); USES (Uses)

(meth(acrylate), vinyl ether, propargyl ether, oxetane, oxirane; prepn. and **photochem.** reaction of calixarene oligomers contg. meth(acrylate) and vinyl and oxetane substituents for UV-curable formulations)

IT **Crosslinking**

(**photochem.**; prepn. and **photochem.** reaction of calixarene oligomers contg. meth(acrylate) and vinyl and oxetane substituents for UV-curable formulations)

IT Thermal stability

(prepn. and **photochem.** reaction of calixarene oligomers contg. meth(acrylate) and vinyl and oxetane substituents for UV-curable formulations)

IT 221550-29-4P 245416-15-3P 245416-16-4P 245416-17-5P 245416-18-6P
245416-19-7P 245416-20-0P 375387-44-3P

RL: PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)

(monomer; prepn. and **photochem.** reaction of calixarene oligomers contg. meth(acrylate) and vinyl and oxetane substituents for UV-curable formulations)

IT 1643-19-2, Tetrabutylammonium bromide

RL: CAT (Catalyst use); USES (Uses)

(phase-transfer catalyst; prepn. and **photochem.** reaction of calixarene oligomers contg. meth(acrylate) and vinyl and oxetane substituents for UV-curable formulations)

IT 68015-88-3, 4-Morpholino-2,5-dibutoxybenzenediazonium hexafluorophosphate
74227-35-3, Bis[4-(diphenylsulfonio)phenyl] sulfide
bis(hexafluorophosphate)

RL: CAT (Catalyst use); USES (Uses)

(**photopolymn.** catalyst; prepn. and **photochem.** reaction of calixarene oligomers contg. meth(acrylate) and vinyl and oxetane substituents for UV-curable formulations)

IT 176256-16-9P 233775-58-1P 233775-59-2P 233775-60-5P 233775-63-8P
 243853-44-3P 343784-07-6P 343784-08-7P 375387-45-4P 375387-46-5P
 RL: PEP (Physical, engineering or chemical process); SPN (Synthetic
 preparation); PREP (Preparation); PROC (Process)
 (prepn. and **photochem.** reaction of calixarene oligomers
 contg. meth(acrylate) and vinyl and oxetane substituents for UV-curable
 formulations)

IT 106-91-2, Glycidyl methacrylate 106-95-6, Allyl bromide, reactions
 106-96-7, Propargyl bromide 110-75-8, 2-Chloroethyl vinyl ether
 814-68-6, Acryloyl chloride 920-46-7, Methacryloyl chloride 3132-64-7,
 Epibromohydrin 3678-15-7, Glycidyl vinyl ether 30674-80-7,
 (2-Methacryloxy)ethyl isocyanate 65338-98-9 **68971-82-4**
78092-53-2, p-tert-Butylcalix[6]arene **79942-31-7**,
 p-Methylcalix[6]arene 99314-44-0, (3-Methyl-3-oxetanylmethoxy) tosylate
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (prepn. and **photochem.** reaction of calixarene oligomers
 contg. meth(acrylate) and vinyl and oxetane substituents for UV-curable
 formulations)

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD

- RE
- (1) Arimura, T; J Syn Org Chem Jpn 1989, V47, P523 CAPLUS
 - (2) Fujita, J; Appl Phys Lett 1996, V68, P1297 CAPLUS
 - (3) Gutsche, C; Calixarenes 1989
 - (4) Holman, R; UV and EB Curing Formulation for Printing Inks, Coatings and
 Paints 1988
 - (5) Iyo, M; J Polym Sci Part A Polym Chem 1999, V37, P3071 CAPLUS
 - (6) Nishikubo, T; J Polym Sci Part A Polym Chem 1999, V37, P1805 CAPLUS
 - (7) Nishikubo, T; J Polym Sci Part A Polym Chem in press
 - (8) Nishikubo, T; Synthesis and Application of Photosensitive Polymers 1979
 - (9) Tabata, Y; Technology & Application of UV/EB Curing 1997
 - (10) Tabata, Y; Ultraviolet and Electron Beam Curable Materials 1989
 - (11) Tsutui, K; Preprints of the 76th Annual Meeting of Chemical Society 1999,
 VII, P1319

L12 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2002 ACS

AN 1994:469532 CAPLUS

DN 121:69532

TI Positive-working radiation-sensitive resist composition

IN Kajita, Tooru; Oota, Toshuki; Miura, Takao

PA Japan Synthetic Rubber Co Ltd, Japan

SO Jpn. Kokai Tokkyo Koho, 21 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G03F007-039

ICS G03F007-004; G03F007-028; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 05173333	A2	19930713	JP 1991-354297	19911220
AB	The title compn. comprises (1) an alkali-sol. resin, (2) a compd. which will generate an acid on irradiation with a radiation, (3) an inclusion compd., and optionally (4) an agent capable of controlling soly. of (1) in an alkali soln. or an agent capable of crosslinking the alkali-sol. resin in the presence of an acid. This compn. shows high resolving power, good heat resistance, etc.				
ST	resist compn inclusion compd				
IT	Semiconductor devices				
	(fabrication of, radiation-sensitive resist compn. for)				
IT	Resists				
	(radiation-sensitive, compn. for, contg. inclusion compd.)				
IT	1180-60-5	7585-39-9,	.beta.-Cyclodextrin	10016-20-3,	
		.alpha.-Cyclodextrin	17465-86-0,	.gamma.-Cyclodextrin	65338-98-9
	78092-53-2				
RL:	TEM (Technical or engineered material use); USES (Uses)				

(photoresist compn. contg.)
 IT 95418-60-3P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
 (prepn. and hydrolysis of, for **photoresist** compn.)
 IT 24979-70-2P, p-Hydroxystyrene homopolymer
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
 (prepn. and reaction of, for **photoresist** compn.)
 IT 24979-70-2DP, p-Hydroxystyrene homopolymer, trimethylsilylated or
 tetrahydroxypyranlated 25053-88-7DP, p-Cresol-formaldehyde copolymer,
 tetrahydroxypyranlated 25053-88-7P, p-Cresol-formaldehyde copolymer
 25085-75-0P, Bisphenol A-formaldehyde copolymer 147625-42-1P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (prepn. and use of, for **photoresist** compn.)

L12 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2002 ACS

AN 1993:49297 CAPLUS

DN 118:49297

TI Negative-working **photosensitive** composition and patterning
 method therewith

IN Onishi, Yoshitake; Mita, Naoko

PA NEC Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 2 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G03F007-038

ICS G03F007-004; G03F007-008; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 04155342	A2	19920528	JP 1990-280419	19901018
	JP 2893923	B2	19990524		

AB The title compn. is prepd. by dissolving a calixarene and(or) its deriv.,
 and a **crosslinking** agent in a solvent. The title method
 comprises (1) coating a substrate with the above compn., and removing the
 solvent to form a film; (2) selectively exposing the film to light or a
 high energy beam; and (3) removing the unexposed regions with a solvent.

ST neg working **photoresist** calixarene lithog

IT Semiconductor devices

(fabrication of, **photoresist** for, calixarenes using)

IT Lithography

(patterning method for,)

IT Cyclophanes

RL: USES (Uses)

(meta-, neg.-working **photoresist** from)

IT Resists

(**photo**-, neg.-working, calixarenes using)

IT 20237-98-3D, derivs.

RL: MOA (Modifier or additive use); USES (Uses)

(**crosslinking** agent, neg.-working **photoresist** from)

IT 78092-53-2D, acetylated 79942-31-7D, acetylated

96627-08-6D, acetylated

RL: USES (Uses)

(neg.-working **photoresist** from)

=> d his

(FILE 'HOME' ENTERED AT 10:34:31 ON 23 JAN 2002)

FILE 'CA' ENTERED AT 10:34:40 ON 23 JAN 2002

L1 2 S PFEIFFER?/AU AND CALIXARENE

FILE 'STNGUIDE' ENTERED AT 10:35:40 ON 23 JAN 2002

FILE 'REGISTRY' ENTERED AT 10:38:03 ON 23 JAN 2002
L2 220 S CALIX AND ARENE

FILE 'CAPLUS' ENTERED AT 10:38:37 ON 23 JAN 2002

L3 97 S L2 AND PHOTO?
L4 2 S L3 AND (E BEAM OR ELECTRON BEAM)
L5 110 S L2 AND HYDROXY
L6 3 S L3 AND HYDROXY
L7 3 S L6 NOT L4
L8 92 S L3 NOT L7 NOT L4
L9 4 S L8 AND CHEM? (5A)AMPLI?
L10 88 S L8 NOT L9
L11 0 S L10 AND GLYCOLURIL
L12 3 S L10 AND CROSSLINK?

=> s l10 not l12

L13 85 L10 NOT L12

=> s l13 and photoresist?

31931 PHOTORESIST?

L14 4 L13 AND PHOTORESIST?

=> d all 1-4

L14 ANSWER 1 OF 4 CAPLUS COPYRIGHT 2002 ACS

AN 2000:837039 CAPLUS

DN 134:23509

TI Method for pattern formation using calix[7]arene for semiconductor substrate

IN Shinko, Sachiko; Ochiai, Yukinori; Yamamoto, Hiromasa; Tejima, Takahiro

PA NEC Corp., Japan; Tokuyama Corp.

SO Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G03F007-038

ICS H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000330281	A2	20001130	JP 1999-144369	19990525
AB	The title method includes the steps of: (1) forming a thin layer on a substrate using a coating soln. mainly made of calix[7]arene; (2) forming a latent image on the thin layer using a high energy beam; and (3) selectively etching-off the thin layer except the latent image part to form a pattern. The method using calix[7]arene provides a pattern of the reduced pattern roughness.				
ST	pattern formation resist semiconductor substrate calixarene				
IT	Metacyclophanes				
	RL: TEM (Technical or engineered material use); USES (Uses)				
	(calixarenes; light sensitive compn. for semiconductor substrate prodn.)				
IT	Photoresists				
	Semiconductor device fabrication				
	(method for pattern formation for semiconductor substrate)				
IT	50-00-0, Formaldehyde, reactions 106-44-5, p-Cresol, reactions				
	108-24-7, Acetic anhydride				
	RL: RCT (Reactant)				
	(calixarene in light-sensitive resist compn.)				
IT	141137-71-5P , p-Methylhexaacetoxycalix[6]arene				
	196408-88-5P , p-Methylheptaacetoxycalix[7]arene				
	196408-89-6P , p-Methyloctaacetoxycalix[8]arene				
	RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)				

(calixarene in light-sensitive resist compn.)

L14 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2002 ACS

AN 1998:289591 CAPLUS

DN 129:28940

TI Amorphous calixarene compositions and formation of crack-free coat films from the compositions

IN Onishi, Yoshitake

PA NEC Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C07C043-23

ICS B29C041-12; C07C069-33; C08J005-18; B29K055-00; B29L007-00

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 42

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10120610	A2	19980512	JP 1996-278191	19961021
	JP 2798072	B2	19980917		
AB	Title compns. useful for elec. insulative and resist application comprise 1-80% amorphous calixarenes and balance amt. of cryst. calixarenes to 100%. A compn. contg. the amorphous calixarenes in an org. solvent can give a coat film with freedom from cracking. Thus, a soln. comprising chlorobenzene 90, 1,3-dimethoxy-4-(tert-butyl)calix[4]arene 10, and acetylated methylcalix[6]arene 2 parts was spin-coated on a Si substrate and dried in N at 200.degree. for 20 min to give title film showing no cracks or no crystn.				
ST	amorphous cryst calixarene coating compn; crack prevention calixarene soln coating; dimethoxybutylcalixarene methylcalixarene compn coating				
IT	Electric insulators				
	Photoresists				
	(amorphous calixarene compns. and formation of crack-free coat films from them)				
IT	Phenolic resins, uses				
	RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)				
	(oligomeric cyclic; amorphous calixarene compns. and formation of crack-free coat films from them)				
IT	122406-45-5 , 5,11,17,23-Tetra-tert-butyl-25,27-dimethoxy-26,28-dihydroxycalix[4]arene				
	RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)				
	(amorphous calixarene compns. and formation of crack-free coat films from them)				
IT	141137-71-5				
	RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)				
	(amorphous calixarene compns. for forming crack-free coating film on substrate)				

L14 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2002 ACS

AN 1994:334992 CAPLUS

DN 120:334992

TI **Photosensitive** resin composition and resist image formation

IN Kato, Koji; Kasuya, Kei; Isobe, Asao

PA Hitachi Chemical Co Ltd, Japan

SO Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G03F007-022

ICS G03F007-023; G03F007-30; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 05346664	A2	19931227	JP 1992-154911	19920615
GI	For diagram(s), see printed CA Issue.				
AB	The compn. comprises alkali-sol. novolak resin contg. 0-10 wt.% low mol. wt. compn. with mol. wt. .ltoreq.2000 (as polystyrene), a quinonediazide compd., and phenolic cyclic compd. I (n = 4-8). The compn. is coated, exposed, and developed to form images. The compn. shows high sensitivity, resoln., thermal-resistance, and suitable for pos.-working resist for integrated circuits.				
ST	resist cyclic phenol compd; quinonediazide novolak resin resist				
IT	Phenolic resins, uses RL: USES (Uses) (novolak, pos.-working photoresist contg.)				
IT	Resists (photo- , contg. novolak resin and quinonediazide compd. and cyclic phenol deriv.)				
IT	27029-76-1, m-Cresol-p-cresol-formaldehyde copolymer 100346-90-5, m-Cresol-p-cresol-formaldehyde-2,5-xyleneol copolymer 112504-03-7, m-Cresol-p-cresol-formaldehyde-3,5-xyleneol copolymer RL: USES (Uses) (pos.-working photoresist contg.)				
IT	60705-62-6P 68971-82-4P RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation) (prepn. and nitration of)				
IT	109051-62-9P 109081-46-1P RL: PREP (Preparation) (prepn. of, pos.-working photoresist contg.)				
IT	98-54-4, p-tert-Butylphenol RL: RCT (Reactant) (reaction of, with formaldehyde)				
IT	50-00-0, Formaldehyde, reactions RL: RCT (Reactant) (reaction of, with tert-butylphenol)				

L14 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2002 ACS

AN 1994:120770 CAPLUS

DN 120:120770

TI **Photosensitive** resin compositions and manufacture of resist patterns

IN Kato, Koji; Kasuya, Kei; Hashimoto, Michiaki

PA Hitachi Chemical Co Ltd, Japan

SO Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G03F007-023

ICS H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 05113662	A2	19930507	JP 1991-273944	19911022
OS	MARPAT 120:120770				
GI	For diagram(s), see printed CA Issue.				
AB	The title compns. contain an alkali-sol. novolak resin of which 30-100 wt.% of the low-mol.-wt. components with a mol. wt. (converted with polystyrene) .ltoreq.2000 are removed, a quinonediazide compd., and a phenolic cyclic compd. I (R1 = H, alkyl, alkoxy; R2 = H, alkyl, alkoxy, Ph; n = 4-8) and the coatings from the compns. are exposed and developed to give resist patterns. The compns. show good photosensitivity , high resoln., and improved thermal resistance and are useful as pos.-working resists for making integrated circuits. A resist prep. by				

using m-cresol-p-cresol HCHO copolymer (low-mol.-wt. components 3 wt.%), I
(R1-2 = H; n = 4), and 2,4,7-trihydroxy-2,4,4-trimethylflavane
1,2-naphthouinonediazido-5-sulfonate gave a submicron resist pattern.
ST quinonediazide novolak resin **photoresist**; phenol cyclic compd
photoresist
IT Phenolic resins, uses
RL: USES (Uses)
(**photoresists** contg.)
IT Resists
(**photo-**, contg. quinonediazide compds., cyclic phenol
compds., and novolak resins)
IT 27029-76-1, m-Cresol-p-cresol-formaldehyde copolymer 100346-90-5,
m-Cresol-p-cresol-formaldehyde-2,5-xyleneol copolymer 112504-03-7,
m-Cresol-p-cresol-formaldehyde-3,5-xyleneol copolymer 140698-96-0
142541-99-9
RL: USES (Uses)
(**photoresists** contg.)
IT 151409-34-6P **151409-35-7P**
RL: PREP (Preparation)
photoresists)
IT 98-54-4 106-44-5, p-Cresol, reactions
RL: RCT (Reactant)
(reaction of, with formaldehyde)
IT 50-00-0, Formaldehyde, reactions
RL: RCT (Reactant)
(reaction of, with phenolic compds.)

=> d his

(FILE 'HOME' ENTERED AT 10:34:31 ON 23 JAN 2002)

FILE 'CA' ENTERED AT 10:34:40 ON 23 JAN 2002

L1 2 S PFEIFFER?/AU AND CALIXARENE

FILE 'STNGUIDE' ENTERED AT 10:35:40 ON 23 JAN 2002

FILE 'REGISTRY' ENTERED AT 10:38:03 ON 23 JAN 2002

L2 220 S CALIX AND ARENE

FILE 'CAPLUS' ENTERED AT 10:38:37 ON 23 JAN 2002

L3 97 S L2 AND PHOTO?

L4 2 S L3 AND (E BEAM OR ELECTRON BEAM)

L5 110 S L2 AND HYDROXY

L6 3 S L3 AND HYDROXY

L7 3 S L6 NOT L4

L8 92 S L3 NOT L7 NOT L4

L9 4 S L8 AND CHEM? (5A)AMPLI?

L10 88 S L8 NOT L9

L11 0 S L10 AND GLYCOLURIL

L12 3 S L10 AND CROSSLINK?

L13 85 S L10 NOT L12

L14 4 S L13 AND PHOTORESIST?

=> s l13 not l14

L15 81 L13 NOT L14

=> s l15 and lithograph?

31738 LITHOGRAPH?

L16 0 L15 AND LITHOGRAPH?

=> s l15 and photocur?

25706 PHOTOCUR?

L17 1 L15 AND PHOTOCUR?

=> d all

L17 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2002 ACS
 AN 2000:653730 CAPLUS
 DN 133:238532
 TI Calixarene derivatives and low-mold-shrinkage curable resin compositions
 containing them
 IN Nishikubo, Tadaomi; Kameyama, Atsushi; Ando, Yoshinori
 PA Kuraray Co., Ltd., Japan; Kanagawa University
 SO Jpn. Kokai Tokkyo Koho, 11 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM C07D493-10
 ICS C08G004-00; C08G008-36; C08G065-16; C08G085-00
 CC 35-7 (Chemistry of Synthetic High Polymers)
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000256362	A2	20000919	JP 1999-61087	19990309
OS	MARPAT 133:238532				
AB	The title derivs. are calixarenes bearing spiro-orthoester groups. Thus, mixing 0.34 g calix[4]resorcinarene with 1.96 g cesium carbonate in 3 mL N-methyl-2-pyrrolidone at room temp. for 5 h, adding 0.08 g tetrabutylammonium bromide and 1.15 g Me bromoacetate, mixing at 70.degree. for 48 h and working up gave 2,8,14,20-tetramethyl-4,6,10,12,16,18,22,24-octakis[(methoxycarbonyl)methoxy]calix[4]resorcinarene which was hydrolyzed, heated with 1,8-diazabicyclo[5.4.0]-7-undecene in N-methyl-2-pyrrolidone at 60.degree. for 12 h and derivatized with 2-bromomethyl-1,4,6-trioxaspiro[4.4]nonane to give a title deriv.				
ST	spiro orthoester deriv calixarene manuf; resorcinarene calixarene compd manuf				
IT	Metacyclophanes RL: IMF (Industrial manufacture); PREP (Preparation) (calixarenes; calixarene derivs. and low-mold-shrinkage curable resin compns. contg. them)				
IT	294182-92-6P	294182-93-7P	294182-94-8P		
	RL: IMF (Industrial manufacture); PREP (Preparation) (calixarene derivs. and low-mold-shrinkage curable resin compns. contg. them)				
IT	96-32-2, Methyl bromoacetate				
	RL: MOA (Modifier or additive use); USES (Uses) (carboxylating agent; calixarene derivs. and low-mold-shrinkage curable resin compns. contg. them)				
IT	84298-07-7				
	RL: MOA (Modifier or additive use); USES (Uses) (derivatization agent; calixarene derivs. and low-mold-shrinkage curable resin compns. contg. them)				
IT	97600-42-5P	116851-59-3P	130508-38-2P	203063-80-3P	294182-90-4P
	294182-91-5P RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation) (intermediate; calixarene derivs. and low-mold-shrinkage curable resin compns. contg. them)				
IT	294182-95-9P	294182-96-0P	294182-97-1P		
	RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (photocurable resins; calixarene derivs. and low-mold-shrinkage curable resin compns. contg. them)				
IT	65338-98-9	68971-82-4, p-tert-Butylcalix[8]arene			
	79942-31-7, p-Methylcalix[6]arene RL: RCT (Reactant) (starting material; calixarene derivs. and low-mold-shrinkage curable resin compns. contg. them)				

=> d his

(FILE 'HOME' ENTERED AT 10:34:31 ON 23 JAN 2002)

FILE 'CA' ENTERED AT 10:34:40 ON 23 JAN 2002
L1 2 S PFEIFFER?/AU AND CALIXARENE

FILE 'STNGUIDE' ENTERED AT 10:35:40 ON 23 JAN 2002

FILE 'REGISTRY' ENTERED AT 10:38:03 ON 23 JAN 2002
L2 220 S CALIX AND ARENE

FILE 'CAPLUS' ENTERED AT 10:38:37 ON 23 JAN 2002
L3 97 S L2 AND PHOTO?
L4 2 S L3 AND (E BEAM OR ELECTRON BEAM)
L5 110 S L2 AND HYDROXY
L6 3 S L3 AND HYDROXY
L7 3 S L6 NOT L4
L8 92 S L3 NOT L7 NOT L4
L9 4 S L8 AND CHEM? (5A)AMPLI?
L10 88 S L8 NOT L9
L11 0 S L10 AND GLYCOURIL
L12 3 S L10 AND CROSSLINK?
L13 85 S L10 NOT L12
L14 4 S L13 AND PHOTORESIST?
L15 81 S L13 NOT L14
L16 0 S L15 AND LITHOGRAPH?
L17 1 S L15 AND PHOTOCUR?

=> s l6 not l17
L18 3 L6 NOT L17

=> s l18 and photoacid
1668 PHOTOACID
L19 0 L18 AND PHOTOACID

=> s l18 and acid?
3925768 ACID?
L20 0 L18 AND ACID?

=> s l18 and resist
40526 RESIST
L21 0 L18 AND RESIST

=> d ti l18 1-5

L18 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2002 ACS
TI Chromic compound having calix arene and spiropyran structures

L18 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2002 ACS
TI A non-covalent assembly for electron transfer based on a
calixarene-porphyrin conjugate: tweezers for a quinone

L18 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2002 ACS
TI Phenolic calixarenes as **photostabilizers** of polymers and organic
materials

=> s l16 not l17
L22 0 L16 NOT L17

=> s l15 not l17
L23 80 L15 NOT L17

=> s l23 and photoacid
1668 PHOTOACID
L24 3 L23 AND PHOTOACID

=> d all 1-3

L24 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2002 ACS

AN 2001:272887 CAPLUS
 DN 135:61583
 TI Synthesis and **photoinduced** deprotection of calixarene derivatives containing certain protective groups
 AU Nishikubo, Tadatomi; Kameyama, Atsushi; Tsutsui, Kousuke; Kishimoto, Shinichi
 CS Department of Applied Chemistry, Faculty of Engineering, Kanagawa University, Yokohama, 221-8686, Japan
 SO Journal of Polymer Science, Part A: Polymer Chemistry (2001), 39(9), 1481-1494
 CODEN: JPACEC; ISSN: 0887-624X
 PB John Wiley & Sons, Inc.
 DT Journal
 LA English
 CC 35-2 (Chemistry of Synthetic High Polymers)
 AB Calixarene derivs. 1, 2, and 3 contg. pendant tert-butoxycarbonyl (t-BOC) groups were synthesized in 81, 93, and 83% yield, resp., by the reaction of C-methylcalix[4]resorcinarene (CRA), p-methylcalix[6]arene (MCA), and p-tert-butylcalix[8]arene (BCA) with di-tert-Bu dicarbonate using triethylamine as a base in pyridine. Calixarene derivs. contg. pendant trimethylsilyl ether (TMSE) groups were obtained in 58, 50, and 82% yields, resp., by the reaction of CRA, MCA, and BCA with 1,1,1,3,3,3-hexamethyldisilazane using chlorotrimethylsilane as an accelerator in THF. Calixarene derivs. contg. pendant cyclohexenyl ether (CHE) groups were also prep'd. in 65, 78, and 84% yields, resp., by the reaction of CRA, MCA, and BCA with 3-bromocyclohexene using KOH as base and tetrabutylammonium bromide as phase-transfer catalyst in N-methyl-2-pyrrolidone. The **photoinduced** deprotection of calixarene derivs. 1-3 was exam'd. with bis-[4-(diphenylsulfonio)phenyl]sulfide bis(hexafluorophosphate) as a **photoacid** generator on UV irradiation followed by heating in the film state, and the deprotection of the t-BOC groups proceeded smoothly in high conversion. The deprotection rate of the t-BOC groups of 2 and 3 was much lower than that of 1 under the same irradiation conditions. The **photoinduced** deprotection of calixarenes contg. tetramethylsilane groups and CHE groups was also exam'd. under similar reaction conditions; the deprotection rate of the substituted compds. was lower than that of 1-3 calixarenes.
 ST calixarene butoxycarbonyl prepn **photoinduced** deprotection diphenylsulfoniophenylsulfide fluorophosphate; trimethylsilyl ether calixarene prepn **photoinduced** deprotection rate; cyclohexenyl ether calixarene prepn **photoinduced** deprotection rate
 IT Protective groups
 (photoinduced deprotection; synthesis and
 photoinduced deprotection of calixarene derivs. contg. t-BOC and trimethylsilyl ether cyclohexenyl ether protective groups)
 IT **Photolysis**
 Photolysis kinetics
 (synthesis and photoinduced deprotection of calixarene derivs. contg. t-BOC and trimethylsilyl ether cyclohexenyl ether protective groups)
 IT 74227-35-3, Bis-[4-(diphenylsulfonio)phenyl]sulfide bis(hexafluorophosphate)
 RL: NUU (Other use, unclassified); USES (Uses)
 (deprotection reagent; synthesis and photoinduced deprotection of calixarene derivs. contg. t-BOC and trimethylsilyl ether cyclohexenyl ether protective groups)
 IT 1643-19-2, Tetra-n-butylammonium bromide
 RL: CAT (Catalyst use); USES (Uses)
 (phase-transfer catalyst; synthesis and photoinduced deprotection of calixarene derivs. contg. t-BOC and trimethylsilyl ether cyclohexenyl ether protective groups)
 IT 75-77-4, Chlorotrimethylsilane, reactions 1521-51-3, 3-Bromocyclohexene 24424-99-5, Di-tert-butyl dicarbonate 65338-98-9, C-Methylcalix[4]resorcinarene 68971-82-4, p-tert-Butylcalix[8]arene 79942-31-7, p-Methylcalix[6]arene
 RL: RCT (Reactant)

(synthesis and **photoinduced** deprotection of calixarene
derivs. contg. t-BOC and trimethylsilyl ether cyclohexenyl ether
protective groups)

IT 68971-83-5P, 5,11,17,23,29,35,41,47-Octa-tert-butyl-
49,50,51,52,53,54,55,56-octakis[(trimethylsilyl)oxy]calix[8]arene
160399-38-2P, 2,8,14,20-Tetramethyl-4,6,10,12,16,18,22,24-
octakis[(trimethylsilyl)oxy]calix[4]resorcinarene 250715-26-5P,
5,11,17,23,29,35,41,47-Octa-tert-butyl-49,50,51,52,53,54,55,56-
octakis[(tert-butoxycarbonyl)oxy]calix[8]arene 250715-27-6P,
5,11,17,23,29,35-Hexamethyl-37,38,39,40,41,42-hexakis[(tert-
butoxycarbonyl)oxy]calix[6]arene 250715-31-2P, 2,8,14,20-Tetramethyl-
4,6,10,12,16,18,22,24-octakis[(tert-butoxycarbonyl)-
oxy]calix[4]resorcinarene 250715-32-3P, 5,11,17,23,29,35-
Hexamethyl-37,38,39,40,41,42-hexakis[(trimethylsilyl)-oxy]calix[6]arene
250715-35-6P, 5,11,17,23,29,35,41,47-Octa-tert-butyl-
49,50,51,52,53,54,55,56-octakis[(3-cyclohexenyl)oxy]calix[8]arene
250715-36-7P, 5,11,17,23,29,35-Hexamethyl-37,38,39,40,41,42-hexakis[(3-
cyclohexenyl)oxy]calix[6]arene 346406-91-5P, 2,8,14,20-Tetramethyl-
4,6,10,12,16,18,22,24-octakis[(3-cyclohexenyl)oxy]calix[4]resorcinarene
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(synthesis and **photoinduced** deprotection of calixarene
derivs. contg. t-BOC and trimethylsilyl ether cyclohexenyl ether
protective groups)

RE.CNT 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD
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L24 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2002 ACS

AN 2001:227550 CAPLUS

DN 135:33719

TI Synthesis of **photoreactive** calixarene derivatives containing
pendant cyclic ether groups

AU Nishikubo, Tadatomi; Kameyama, Atsushi; Tsutsui, Kousuke

CS Department of Applied Chemistry, Faculty of Engineering, Kanagawa
University, Yokohama, 221-8686, Japan

SO Journal of Polymer Science, Part A: Polymer Chemistry (2001), 39(8),
1169-1179

CODEN: JPACEC; ISSN: 0887-624X

PB John Wiley & Sons, Inc.

DT Journal

LA English

CC 35-7 (Chemistry of Synthetic High Polymers)

AB New **photoreactive** calixarene derivs. contg. cationically
polymerizable pendant oxetane groups were synthesized in good yields by
the substitution reaction of C-methylcalix[4]resorcinarene (CRA),
p-methylcalix[6]arene (MCA), and p-tert-butylcalix[8]arene (BCA) with
(3-methyloxetan-3-yl)methyl 4-toluenesulfonate and (3-ethyloxetan-3-

yl)methyl 4-toluenesulfonate with potassium hydroxide as a base and tetrabutylammonium bromide as a phase transfer catalyst in N-methyl-2-pyrrolidone, resp. Calixarene derivs. contg. cationically polymerizable pendant oxirane groups were also prepd. in good yields by the substitution reaction of CRA, MCA, and BCA with epibromohydrin, resp., with cesium carbonate as a base in N-methyl-2-pyrrolidone. The thermal stability of the obtained calixarene derivs. contg. pendant oxetane groups or oxirane groups was examd. with thermogravimetric anal., and it was found that these calixarene derivs. had thermal stability beyond 340 .degree.C. The **photochem.** reaction of calixarenes contg. pendant oxetane groups was examd. with certain **photoacid** generators in the film state. In this reaction system, calixarene 1a, composed of a CRA structure and pendant (3-methyloxetan-3-yl)methyl groups, showed the highest **photochem.** reactivity when bis-[4-(diphenylsulfonio)phenyl]sulfide bis(hexafluorophosphate) was used as the catalyst. The **photochem.** reaction of calixarenes contg. pendant oxirane groups was also examd., and it was found that the **photoinitiated** cationic polymn. of these calixarenes proceeded smoothly under the same conditions; however, the reaction rates were lower than those of the corresponding calixarenes contg. pendant oxetane groups.

ST **photoreactive** calixarene deriv pendant cyclic ether; oxetane calixarene deriv **photoreactive** prepn; oxirane calixarene deriv **photoreactive** prepn

IT Metacyclophanes
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (calixarenes; prepn. and polymn. of **photoreactive** calixarene derivs. contg. pendant cyclic ether groups)

IT Polymerization
 (cationic, **photochem.**; prepn. and polymn. of **photoreactive** calixarene derivs. contg. pendant cyclic ether groups)

IT 3132-64-7, Epibromohydrin **68971-82-4**, p-tert-Butylcalix[8]arene **79942-31-7**, p-Methylcalix[6]arene
 RL: RCT (Reactant)
 (in prepn. of **photoreactive** calixarene derivs. contg. pendant cyclic ether groups)

IT 65338-98-9P 99314-44-0P 237403-65-5P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
 (in prepn. of **photoreactive** calixarene derivs. contg. pendant cyclic ether groups)

IT 237403-63-3P 237403-64-4P 243853-43-2P 243853-44-3P 259823-37-5P
 343784-06-5P 343784-07-6P 343784-08-7P 343784-09-8P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
 (prepn. and **photoinitiated** cationic polymn. of)

IT 343784-10-1P 343784-11-2P 343784-12-3P 343784-13-4P 343784-14-5P
 343784-15-6P 343784-16-7P 343784-17-8P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (prepn. by **photoinitiated** cationic polymn.)

IT 98-59-9, p-Toluenesulfonyl chloride
 RL: RCT (Reactant)
 (reaction with hydroxymethylmethyloxetane)

IT 108-46-3, Resorcinol, reactions
 RL: RCT (Reactant)
 (reaction with paraldehyde)

IT 123-63-7, Paraldehyde
 RL: RCT (Reactant)
 (reaction with resorcinol)

IT 3047-32-3, 3-Hydroxymethyl-3-ethyloxetane 3143-02-0, 3-Hydroxymethyl-3-methyloxetane
 RL: RCT (Reactant)
 (reaction with toluenesulfonyl chloride)

RE.CNT 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD
 RE

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- (9) Iyo, M; Proc RadTech Asia '97 1997, P349
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- (13) Nakayama, R; Polym Prepr Jpn 1998, V47, P417
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L24 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2002 ACS

AN 1999:328222 CAPLUS

DN 131:130330

TI Synthesis and **photochemical** reaction of novel p-alkylcalix[n]arene derivatives containing cationically polymerizable groups

AU Nishikubo, Tadatomi; Kameyama, Atsushi; Tsutsui, Kousuke; Iyo, Masami

CS Department of Applied Chemistry, Faculty of Engineering, Kanagawa University, Yokohama, 221-8686, Japan

SO J. Polym. Sci., Part A: Polym. Chem. (1999), 37(12), 1805-1814
CODEN: JPACEC; ISSN: 0887-624X

PB John Wiley & Sons, Inc.

DT Journal

LA English

CC 35-4 (Chemistry of Synthetic High Polymers)

AB New **photoreactive** p-methylcalix[6]arene (MCA) derivs. contg. cationically polymerizable groups such as propargyl ether (calixarene 1), allyl ether (calixarene 2), and ethoxy vinyl ether (calixarene 3) groups were synthesized with 80, 74, and 84% yields by the substitution reaction of MCA with propargyl bromide, allyl bromide, and 2-chloroethyl vinyl ether (CEVE), resp., in the presence of either potassium hydroxide or sodium hydride by using tetrabutylammonium bromide (TBAB) as a phase transfer catalyst (PTC). The p-tert-butylcalix[8]arene (BCA) deriv. contg. ethoxy vinyl ether groups (calixarene 4) was also synthesized in 83% yield by the substitution reaction of BCA with CEVE by using sodium hydride as a base and TBAB as a PTC. The MCA deriv. contg. 1-propenyl ether groups (calixarene 5) was synthesized in 80% yield by the isomerization of calixarene 2, which contained allyl ether groups, by using potassium tert-butoxide as a catalyst. The **photochem.** reactions of calixarene 1, 3, 4, 5, and 6 were examd. with certain **photoacid** generators in the film state. In this reaction system, calixarene 3 contg. ethoxy vinyl ether groups showed the highest **photochem.** reactivity when bis-[4-(diphenylsulfonio)phenyl]sulfide bis(hexafluorophosphate) (DPSP) was used as the catalyst. On the other hand, calixarene 1 contg. propargyl ether groups had the highest **photochem.** reactivity when 4-morpholino-2,5-dibutoxybenzenediazonium hexafluorophosphate (MDBZ) was used as the catalyst. It was also found that the prepd. calixarene derivs. contg. cationically polymerizable groups such as propargyl, allyl, vinyl, and also 1-propenyl ethers have good thermal stability.

ST **photochem** polymn vinyl propargyl propenyl calixarene; catalyst

photochem polymn unsatd alkylcalixarene

IT Polymerization

Polymerization catalysts
(cationic, **photochem.**; synthesis and **photochem.**
polymn. of alkylcalix[n]arene derivs. contg. cationically polymerizable
groups)

IT Addition reaction catalysts
Glass transition temperature
Isomerization
Solubility
Thermal stability
(synthesis and **photochem.** polymn. of alkylcalix[n]arene
derivs. contg. cationically polymerizable groups)

IT Metacyclophanes
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP
(Preparation)
(unsatd. derivs.; synthesis and **photochem.** polymn. of
alkylcalix[n]arene derivs. contg. cationically polymerizable groups)

IT 1112-67-0, Tetrabutylammonium chloride 1643-19-2, Tetrabutylammonium
bromide 2304-30-5, Tetrabutylphosphonium chloride 3115-68-2,
Tetrabutylphosphonium bromide 6674-22-2 7447-40-7, Potassium chloride
(KCl), uses 7758-02-3, Potassium bromide (KBr), uses 17455-13-9,
18-Crown-6
RL: CAT (Catalyst use); USES (Uses)
(in unsatd. calixarene prepn.; synthesis and **photochem.**
polymn. of alkylcalix[n]arene derivs. contg. cationically polymerizable
groups)

IT 106-95-6, Allyl bromide, reactions 106-96-7, Propargyl bromide
3678-15-7, Glycidyl vinyl ether
RL: RCT (Reactant)
(in unsatd. calixarene prepn.; synthesis and **photochem.**
polymn. of alkylcalix[n]arene derivs. contg. cationically polymerizable
groups)

IT 110-75-8, 2-Chloroethyl vinyl ether
RL: RCT (Reactant)
(isomerization of; synthesis and **photochem.** polymn. of
alkylcalix[n]arene derivs. contg. cationically polymerizable groups)

IT 233775-59-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(isomerization of; synthesis and **photochem.** polymn. of
alkylcalix[n]arene derivs. contg. cationically polymerizable groups)

IT 32760-80-8 68015-88-3, 4-Morpholino-2,5-dibutoxybenzenediazonium
hexafluorophosphate 74227-35-3, Bis-[4-(diphenylsulfonio)phenyl]sulfide
bis(hexafluorophosphate)
RL: CAT (Catalyst use); USES (Uses)
(synthesis and **photochem.** polymn. of alkylcalix[n]arene
derivs. contg. cationically polymerizable groups)

IT 68971-82-4, p-tert-Butylcalix[8]arene 79942-31-7
RL: RCT (Reactant)
(synthesis and **photochem.** polymn. of alkylcalix[n]arene
derivs. contg. cationically polymerizable groups)

IT 233775-58-1P 233775-60-5P 233775-61-6P 233775-62-7P 233775-63-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(synthesis and **photochem.** polymn. of alkylcalix[n]arene
derivs. contg. cationically polymerizable groups)

IT 233775-64-9P 233775-65-0P 233775-66-1P 233775-67-2P 233775-69-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(synthesis and **photochem.** polymn. of alkylcalix[n]arene
derivs. contg. cationically polymerizable groups)

RE.CNT 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD

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- (5) Crivello, J; J Polym Sci Polym Chem Ed 1996, V34, P2051 CAPLUS
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(FILE 'HOME' ENTERED AT 10:34:31 ON 23 JAN 2002)

FILE 'CA' ENTERED AT 10:34:40 ON 23 JAN 2002

L1 2 S PFEIFFER?/AU AND CALIXARENE

FILE 'STNGUIDE' ENTERED AT 10:35:40 ON 23 JAN 2002

FILE 'REGISTRY' ENTERED AT 10:38:03 ON 23 JAN 2002

L2 220 S CALIX AND ARENE

FILE 'CAPLUS' ENTERED AT 10:38:37 ON 23 JAN 2002

L3 97 S L2 AND PHOTO?
L4 2 S L3 AND (E BEAM OR ELECTRON BEAM)
L5 110 S L2 AND HYDROXY
L6 3 S L3 AND HYDROXY
L7 3 S L6 NOT L4
L8 92 S L3 NOT L7 NOT L4
L9 4 S L8 AND CHEM? (5A)AMPLI?
L10 88 S L8 NOT L9
L11 0 S L10 AND GLYCOLURIL
L12 3 S L10 AND CROSSLINK?
L13 85 S L10 NOT L12
L14 4 S L13 AND PHOTORESIST?
L15 81 S L13 NOT L14
L16 0 S L15 AND LITHOGRAPH?
L17 1 S L15 AND PHOTOCUR?
L18 3 S L6 NOT L17
L19 0 S L18 AND PHOTOACID
L20 0 S L18 AND ACID?
L21 0 S L18 AND RESIST
L22 0 S L16 NOT L17
L23 80 S L15 NOT L17
L24 3 S L23 AND PHOTOACID

=> s l23 not l24

L25 77 L23 NOT L24

=> s l25 and resist?

1210873 RESIST?

L26 5 L25 AND RESIST?

=> d all 1-5

L26 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2002 ACS

AN 2000:80152 CAPLUS

DN 132:144365

TI Silver halide **photographic** material with good storage stability

IN Watanabe, Yasuhiro; Fukazawa, Fumie
PA Konica Co., Japan
SO Jpn. Kokai Tokkyo Koho, 82 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM G03C001-28
ICS G03C001-20; G03C007-00
CC 74-2 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000035628	A2	20000202	JP 1998-202038	19980716
AB	The photog. material has .gtoreq.1 red-sensitive Ag halide emulsion layers, .gtoreq.1 green-sensitive Ag halide emulsion layers, .gtoreq.1 blue-sensitive Ag halide emulsion layers, and .gtoreq.1 non-visible ray-sensitive Ag halide emulsion layers contg. .gtoreq.1 compds. showing strong sensitization effect. The material shows high sensitivity and good heat, moisture, and O resistance without increase of fog.				
ST	nonvisible ray sensitive silver halide photog emulsion; IR sensitizer silver halide photog emulsion				
IT	Photographic sensitizers (IR; high-sensitivity silver halide photog. material having nonvisible ray-sensitive layers)				
IT	Photographic films (high-sensitivity silver halide photog. material having nonvisible ray-sensitive layers)				
IT	Phenolic resins, uses RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses) (high-sensitivity silver halide photog. material having nonvisible ray-sensitive layers)				
IT	366-18-7, 2,2'-Bipyridine 2503-56-2 9003-35-4, Phenol-formaldehyde copolymer 14187-32-7, Dibenzo-18-crown-6 23249-95-8 27934-56-1 63123-22-8 96425-00-2 137427-02-2 160380-68-7 256505-56-3 256505-57-4 , Calix[4]arenetetrol-phenol-formaldehyde copolymer 256505-58-5 RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses) (high-sensitivity silver halide photog. material having nonvisible ray-sensitive layers)				

L26 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2002 ACS

AN 1998:475424 CAPLUS

DN 129:222350

TI The effects of covalent binding of the electroactive components in durable CHEMFET membranes-impedance spectroscopy and ion sensitivity studies

AU Lugtenberg, Ronny J. W.; Egberink, Richard J. M.; van den Berg, Albert; Engbersen, Johan F. J.; Reinhoudt, David N.

CS MESA Research Institute, Laboratory of Supramolecular Chemistry and Technology, University of Twente, Enschede, 7500 AE, Neth.

SO J. Electroanal. Chem. (1998), 452(1), 69-86

CODEN: JECHE; ISSN: 0368-1874

PB Elsevier Science S.A.

DT Journal

LA English

CC 72-2 (Electrochemistry)

Section cross-reference(s): 36, 79

AB The effects of covalent attachment of the electroactive components (i.e. the cation receptor mols. and the tetraphenylborate anions) in durable CHEMFET membranes is described. CHEMFETs for monovalent cations having either one or both electroactive components covalently bound in the membrane matrix exhibit Nernstian responses and good selectivities for Na⁺, or K⁺ ions, however, covalent attachment of borate in the membrane results in non-functioning sensors. Durability studies with CHEMFETs

modified with polysiloxane membranes which are selective for Na⁺, K⁺ and Pb²⁺ ions show long lifetimes upon continuous exposure to a water stream. Na⁺ selective CHEMFETs with covalently attached Na⁺ ionophores and free borate in the membrane are still Na⁺ selective after 82 wk of continuous exposure to water. Similar K⁺ and Pb²⁺ selective polysiloxane CHEMFETs showed good selectivities for at least 26 and 19 wk, resp. Impedance measurements showed that in all cases the lowest membrane **resistance** and the most stable CHEMFETs were obtained with polysiloxane membranes contg. covalently attached ion-selective calix[4]arene-based receptor mols. and free anionic sites.

ST polysiloxane calixarene covalent binding electroactive component; CHEMFET membrane impedance ion sensitivity selectivity

IT Sensors
(CHEMFET membranes with electroactive components)

IT Ionophores
Membranes (nonbiological)
(FET modified with polysiloxane membranes - impedance spectroscopy and ion sensitivity studies)

IT Field effect transistors
(chem. modified; modified with polysiloxane membranes - impedance spectroscopy and ion sensitivity studies)

IT Mass spectra
Proton NMR spectroscopy
(for calix[4]arene derivs. used in fabrication of CHEMFETs modified with polysiloxane membrane selective for Na⁺, K⁺, Cs⁺, and Pb²⁺)

IT ISFET
(modified with poly(hydroxyethyl methacrylate) hydrogel; durable CHEMFET modified with polysiloxane membranes with electroactive components)

IT Process dynamics
(of CHEMFETs modified with polysiloxane membrane selective for Na⁺, K⁺, Cs⁺, and Pb²⁺)

IT Stability
(of Na⁺, K⁺, and Pb²⁺ selective CHEMFET's modified with polysiloxane)

IT Electric impedance
(of durable CHEMFET modified with polysiloxane membranes with electroactive components)

IT Electric **resistance**
(of polysiloxane membranes with electroactive components)

IT Ion selectivity
(with durable CHEMFET modified with polysiloxane membranes -)

IT Ion-selective electrodes
(with durable CHEMFET modified with polysiloxane membranes - impedance spectroscopy and ion sensitivity studies)

IT 14280-50-3, Lead(2+), properties 17341-25-2, Sodium(1+), properties 24203-36-9, Potassium(1+), properties
RL: PRP (Properties)
(CHEMFET modified with polysiloxane membranes ion sensitivity for)

IT 158880-26-3
RL: PRP (Properties)
(effects of covalent binding of electroactive components in durable CHEMFET membranes-impedance spectroscopy and ion sensitivity studies)

IT 105560-52-9, Potassium tetrakis-[3,5-bis(trifluoromethyl)phenyl]borate
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(in fabrication of durable CHEMFET modified with polysiloxane membranes)

IT 77181-47-6, 2,2'-Dimethoxy-2-phenylacetophenone
RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)
(**photoinitiator** on fabrication of ISFET modified with poly(hydroxyethyl methacrylate) hydrogel)

IT **281-54-9**, Calix[4]arene
RL: PRP (Properties); RCT (Reactant)
(reactant in synthesis 25,26,27-trihydroxy-28-propoxycalix[4]arene)

IT 212519-06-7P 212519-09-0P
RL: NUU (Other use, unclassified); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(receptor in CHEMFET modified with polysiloxane membrane selective for

IT Cs+)
 212518-97-3P 212519-02-3P
 RL: NUU (Other use, unclassified); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
 (receptor in CHEMFET modified with polysiloxane membrane selective for K+)

IT 97600-39-0 161323-87-1
 RL: FMU (Formation, unclassified); PRP (Properties); FORM (Formation, nonpreparative)
 (receptor in CHEMFET modified with polysiloxane membrane selective for Na+)

IT 212519-12-5P 212519-14-7P
 RL: NUU (Other use, unclassified); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
 (receptor in CHEMFET modified with polysiloxane membrane selective for Pb2+)

IT 150112-08-6P 212519-19-2P 212519-23-8P 212519-25-0P 212519-29-4P
 212519-35-2P 212519-39-6P 212519-45-4P 212519-50-1P
 RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
 (synthesis of calix[4]arene derivs.)

IT 212519-55-6P
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (synthesis of calix[4]arene derivs.)

IT 138240-25-2 201282-04-4
 RL: RCT (Reactant)
 (synthesis of calix[4]arene derivs.)

L26 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2002 ACS
 AN 1998:156486 CAPLUS
 DN 128:263769
 TI Stabilizing effect of p-tert-butylcalix[4]arene on radiation degradation of polypropylene
 AU Yuan, Lihua; Feng, Wen; Zheng, Shiyong; Huang, Guanglin
 CS Department of Chemistry, Sichuan University, Chengdu, 610064, Peop. Rep. China
 SO Fushe Yanjiu Yu Fushe Gongyi Xuebao (1997), 15(4), 217-223
 CODEN: FYYXEA; ISSN: 1000-3436
 PB Fushe Yanjiu Yu Fushe Gongyi Xuebao Bianjibu
 DT Journal
 LA Chinese
 CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

AB Polypropylene (PP) contg. a cyclic phenolic antioxidant p-tert-butylcalix[4]arene as additive was irradiated with .gamma.-ray in air or in vacuum at ambient temp. The mech. properties, variation of IR spectra and decompn. temp. in thermal anal. were measured for the irradiated PP sheets. Compared with BHT, p-tert-butylcalix[4]arene showed radiation stabilization towards PP during and after irradiation, esp., at a high dose. The formation of the stable calix[4]arene radical was confirmed by ESR and other spectra. No decompn. species of the calixarene were obsd. with dose .ltoreq. 1000 kGy and dose rate of 6.5 x 10³ kGy/h, indicating the higher radiation-resistance of the calixarene structure.

ST calixarene polypropylene gamma irradiation mech property; radiation degradation polypropylene stabilizer calixarene

IT IR spectra
 (for study of stabilizing effect of calixarene on radiation degradation of polypropylene)

IT Phenolic antioxidants
 (of calixarene for study of stabilizing effect on radiation degradation of polypropylene)

IT Metacyclophanes
 RL: PRP (Properties)
 (stabilizing effect of calixarene on radiation degradation of polypropylene)

IT Photolysis

(.gamma. radiation-induced; stabilizing effect of calixarene on radiation degrdn. of polypropylene)
IT 9003-07-0, Polypropylene 60705-62-6, p-tert-Butylcalix[4]arene
RL: PRP (Properties); RCT (Reactant)
(stabilizing effect on radiation degrdn. of polypropylene)
IT 205314-92-7P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(.gamma.-ray irradiation product of calixarene for stabilizing polypropylene)

L26 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2002 ACS

AN 1994:311500 CAPLUS

DN 120:311500

TI Electrophotographic **photoreceptor** containing calix arene compound

IN Maeda, Shuichi

PA Mitsubishi Chem Ind, Japan

SO Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G03G005-05

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 05323632	A2	19931207	JP 1992-133782	19920526
OS	MARPAT 120:311500				
GI	For diagram(s), see printed CA Issue.				
AB	The photoreceptor has a photosensitive layer contg. a charge-generating compd., a charge-transporting compd., and a calixarene compd. having a general structure I (m = 4-8; R1 = H, alkyl; R2 = H, alkyl, phenyl). The photoreceptor shows O3 resistance				
ST	electrophotog photoreceptor calixarene durable				
IT	Electrophotographic photoconductors and photoreceptors (contg. calixarene compd., ozone-resistant)				
IT	10028-15-6, Ozone, miscellaneous				
	RL: MSC (Miscellaneous)				
	(electrophotog. photoreceptors contg. calixarene compd. with resistance to)				
IT	60705-62-6 78092-53-2 96107-95-8				
	RL: USES (Uses)				
	(electrophotog. photoreceptors contg., for ozone resistance)				

L26 ANSWER 5 OF 5 CAPLUS COPYRIGHT 2002 ACS

AN 1992:215912 CAPLUS

DN 116:215912

TI Soluble calixarene derivatives and films prepared from them

IN Mita, Naoko

PA NEC Corp., Japan

SO Eur. Pat. Appl., 9 pp.

CODEN: EPXXDW

DT Patent

LA English

IC ICM C07C069-12

ICS C08J005-18

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 25, 74

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 456497	A2	19911113	EP 1991-304191	19910509
	EP 456497	A3	19930331		
	EP 456497	B1	19950705		

R: DE, FR, GB

JP 04015232	A2	19920120	JP 1990-120310	19900510
JP 06053819	B4	19940720		
JP 04128253	A2	19920428	JP 1990-249151	19900919
JP 07023340	B4	19950315		
US 5143784	A	19920901	US 1991-694491	19910502

PRAI JP 1990-120310 19900510
JP 1990-249151 19900919

OS MARPAT 116:215912

AB The title derivs., esp. acetylated methylcalix[n]arenes (n = 4-6), show good soly. in org. solvents, form films with good heat **resistance** and hardness, and form neg. patterns upon irradiation and dissolution of unirradiated regions with an org. solvent. Refluxing 18.7 g p-methylphenol with 9 g paraformaldehyde in xylene in the presence of aq. KOH soln. for 4 h, followed by reaction with Ac2O, gave acetylated methylcalix[6]arene which was dissolved in PhMe and spin coated on Si to give a hard film.

ST calixarene deriv prepn soly; formaldehyde methylphenol calixarene prepn; **resist** neg calixarene deriv; film calixarene deriv polymer; polymn calixarene deriv **resist**; irradiation polymn calixarene **resist**

IT Cyclophanes
RL: PREP (Preparation)
(meta-, derivs., prepn. of sol., for films and **resists**)

IT **Resists**
(photo-, neg.-working, calixarene derivs. for)

IT Polymerization
(radiochem., of calixarene derivs.)

IT **79942-31-7**
RL: USES (Uses)
(methylcalixarene)

IT **60705-62-6P 68971-82-4P 82452-92-4P 96627-08-6P**, Calix[6]arene **141137-71-5P**
RL: PREP (Preparation)
(prepn. of sol., for films and neg. **resist**)

IT **141137-71-5DP**, polymers
RL: PREP (Preparation)
(prepn. of, for films and neg. **resist**)

IT 98-54-4, p-tert-Butylphenol 106-44-5, p-Methylphenol, reactions
108-95-2, Phenol, reactions 140-66-9, p-tert-Octylphenol
RL: RCT (Reactant)
(reaction of, with formaldehyde, in prepn. of calixarene derivs.)

IT 108-24-7, Acetic anhydride
RL: RCT (Reactant)
(reaction of, with methylcalixarenes)

IT 30525-89-4, Paraformaldehyde
RL: RCT (Reactant)
(reaction of, with phenol derivs., in prepn. of calixarenes)

=> d his

(FILE 'HOME' ENTERED AT 10:34:31 ON 23 JAN 2002)

FILE 'CA' ENTERED AT 10:34:40 ON 23 JAN 2002

L1 2 S PFEIFFER?/AU AND CALIXARENE

FILE 'STNGUIDE' ENTERED AT 10:35:40 ON 23 JAN 2002

FILE 'REGISTRY' ENTERED AT 10:38:03 ON 23 JAN 2002

L2 220 S CALIX AND ARENE

FILE 'CAPLUS' ENTERED AT 10:38:37 ON 23 JAN 2002

L3 97 S L2 AND PHOTO?

L4 2 S L3 AND (E BEAM OR ELECTRON BEAM)

L5 110 S L2 AND HYDROXY

L6 3 S L3 AND HYDROXY

L7 3 S L6 NOT L4

L8 92 S L3 NOT L7 NOT L4
 L9 4 S L8 AND CHEM? (5A)AMPLI?
 L10 88 S L8 NOT L9
 L11 0 S L10 AND GLYCOURIL
 L12 3 S L10 AND CROSSLINK?
 L13 85 S L10 NOT L12
 L14 4 S L13 AND PHOTORESIST?
 L15 81 S L13 NOT L14
 L16 0 S L15 AND LITHOGRAPH?
 L17 1 S L15 AND PHOTOCUR?
 L18 3 S L6 NOT L17
 L19 0 S L18 AND PHOTOACID
 L20 0 S L18 AND ACID?
 L21 0 S L18 AND RESIST
 L22 0 S L16 NOT L17
 L23 80 S L15 NOT L17
 L24 3 S L23 AND PHOTOACID
 L25 77 S L23 NOT L24
 L26 5 S L25 AND RESIST?

=> s 125 not 126

L27 72 L25 NOT L26

=> s 127 and lithograph?

31738 LITHOGRAPH?

L28 0 L27 AND LITHOGRAPH?

=> s 127 and acid?

3925768 ACID?

L29 15 L27 AND ACID?

=> d all 1-15

L29 ANSWER 1 OF 15 CAPLUS COPYRIGHT 2002 ACS

AN 2001:466036 CAPLUS

DN 135:204581

TI Characterization of calixarenes by coupling of liquid chromatography with MALDI-TOF-MS

AU Kruger, Ralph-Peter; Falkenhagen, Jana; Schulz, Gunter; Gloede, Jorg

CS Bundesanstalt fur Materialforschung und -prufung (BAM), Unter den Eichen 87, Fachgruppe VI.3, Berlin, 12205, Germany

SO GIT Labor-Fachz. (2001), 45(4), 380-384

CODEN: GLFAF5

PB GIT Verlag GmbH

DT Journal

LA German

CC 80-6 (Organic Analytical Chemistry)

AB The sepn. of calixarene and calixarene derivs. occurring as byproducts in the industrial novolak resin prodn. was studied with liq. adsorption chromatog. at crit. conditions (LACCC). The LACCC was performed on a RP-phase column using a THF/water mixt. with 0.1% trifluoroacetic acid and a coupling with MALDI-TOF mass spectrometry was used for the identification of the calixarenes. For the characterization of an octylphenol novolak and a p-octyl calixarene mixt. the crit. solvent compn. was detd. where octyl calixarenes with different ring sizes eluted at the same retention time whereas the novolak appears sepd. in the chromatogram. As for an increasing hydrophobic character of the calixarenes a lower polarity of the mobile phase is required for the elution of the calixarenes this was further used to sep. differently substituted calixarenes. In addn. substituted calixarene were sepd. according to their ring sizes using the crit. conditions for octyl calixarenes.

ST liq adsorption chromatog MALDI MS calixarene detn

IT Liquid chromatography

(adsorption, at crit. conditions; calixarene detn. by coupling of liq. chromatog. with MALDI-TOF-MS)

IT Hyphenated techniques

Time-of-flight mass spectrometry
(calixarene detn. by coupling of liq. chromatog. with MALDI-TOF-MS)

IT Metacyclophanes
RL: ANT (Analyte); ANST (Analytical study)
(calixarenes; calixarene detn. by coupling of liq. chromatog. with MALDI-TOF-MS)

IT Laser ionization mass spectrometry
(**photodesorption**, matrix-assisted; calixarene detn. by coupling of liq. chromatog. with MALDI-TOF-MS)

IT Laser desorption mass spectrometry
(**photoionization**, matrix-assisted; calixarene detn. by coupling of liq. chromatog. with MALDI-TOF-MS)

IT 42607-92-1 53255-02-0 59288-62-9 60705-62-6
68971-82-4 68971-85-7 74568-07-3
78092-53-2 79942-31-7 81475-22-1
82452-92-4 82452-93-5 83933-03-3
96107-95-8 135549-05-2 138452-84-3
RL: ANT (Analyte); ANST (Analytical study)
(calixarene detn. by coupling of liq. chromatog. with MALDI-TOF-MS)

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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L29 ANSWER 2 OF 15 CAPLUS COPYRIGHT 2002 ACS

AN 2001:391084 CAPLUS

DN 135:146412

TI **Photomechanical** chemical microsensors

AU Datskos, P. G.; Sepaniak, M. J.; Tipple, C. A.; Lavrik, N.

CS Oak Ridge National Laboratory, Oak Ridge, TN, 37831-8039, USA

SO Sens. Actuators, B (2001), B76(1-3), 393-402
CODEN: SABCEB; ISSN: 0925-4005

PB Elsevier Science B.V.

DT Journal

LA English

CC 80-2 (Organic Analytical Chemistry)
Section cross-reference(s): 4

AB Recently, there was an increasing demand to perform real-time in situ chem. detection of hazardous materials, contraband chems., and explosive chems. The advent of inexpensive mass produced MEMS (microelectromech. systems) devices has enabled the use of various microstructures for chem. detection. For example, microcantilevers respond to chem. stimuli by undergoing changes in their bending and resonance frequency even when a small no. of mols. adsorb on their surface. In the authors' present studies, the authors extended this concept by studying changes in both the adsorption-induced stress and **photo**-induced stress as target chems. adsorb or desorb on the surface of microcantilevers. **Photo**-induced bending of microcantilevers depends on the no. of absorbed mols. on their surface. However, microcantilevers that have undergone **photo**-induced bending will adsorb a different no. of guest mols. Depending on the **photon** wavelength and microcantilever material, the microcantilever can be made to bend by expanding or contracting a surface layer on one of its sides, unequally. Coating the surface of the microstructure with different materials can provide chem. specificity for the target chems. However, by choosing a handful of different

photon wavelengths, tunable chem. selectivity can be achieved due to differentiated **photo**-induced response without the need for multiple chem. coatings. The authors will present and discuss the authors' results on diisopropyl Me phosphonate (DIMP), trinitrotoluene (TNT), two isomers of dimethylnaphthalene (DMN), tetrachloroethylene (TCE) and trichloroethylene (TRCE).

ST **photomech** chem microsensor

IT Sensors

(MEMS; **photomech.** chem. microsensors)

IT Cantilevers (components)

(microcantilever; **photomech.** chem. microsensors)

IT 79-01-6, Trichloroethylene, analysis 118-96-7, Trinitrotoluene

127-18-4, Tetrachloroethylene, analysis 569-41-5, 1,8-

Dimethylnaphthalene 582-16-1, 2,7-Dimethylnaphthalene 1445-75-6, DIMP

RL: ANT (Analyte); ANST (Analytical study)

(analyte; **photomech.** chem. microsensors)

IT 13770-18-8, Copper perchlorate 71310-21-9, 11-Mercaptoundecanoic

acid

RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)

(coating material; **photomech.** chem. microsensors for detection of DIMP)

IT 60705-62-6, 4-tert-Butylcalix[4]arene

RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)

(coating material; **photomech.** chem. microsensors for detection of chlorinated ethylene)

IT 160661-60-9, Per-6-thio-.beta.-cyclodextrin

RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)

(coating material; **photomech.** chem. microsensors for detection of dimethylnaphthalene isomers)

IT 7440-57-5, Gold, analysis 12033-89-5, Silicon nitride, analysis

RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)

(gold-coated silicon nitride microcantilevers; **photomech.** chem. microsensors for detection of TNT)

RE.CNT 42 THERE ARE 42 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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L29 ANSWER 3 OF 15 CAPLUS COPYRIGHT 2002 ACS

AN 2000:606101 CAPLUS

DN 133:281595

TI Calixarenes which are transporters in liquid membranes. II. Azo derivatives of calix[4]arenes

AU Serban, Bogdan; Ruse, Elena; Minca, Mihaela; Pasare, Iulian; Nechifor, Gheorghe

CS Facultatea de Chimie Industrială, Universitatea Politehnica București, Rom.

SO Revista de Chimie (Bucharest) (2000), 51(4), 249-258
CODEN: RCBUAU; ISSN: 0034-7752

PB SYSCOM 18 SRL

DT Journal

LA Romanian

CC 25-29 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)

AB Two chromophoric calixarenes were prepd. by coupling reactions between calix[4]arene and diazonium salts of 4'-aminobenzo-15-crown-5 and sulfanilic acid. Coupling reactions were carried out in heterogeneous medium in order to diminish the rate of coupling and avoid the introduction of chromophoric azo-group in all p-position. The metal complexation behavior of newly prepd. compds. was investigated with the help of UV-VIS and IR spectroscopy. Most attention has been paid to the azo compd. derived from sulfanilic acid, which can serve as an acid-base indicator in aq. soln. (UV-VIS spectra were recorded at various pH values). The facilitated transport with azo-calixarene derivs. of some cations through ferrofluid membranes was studied. This transport was monitored through UV-VIS and flame photometry methods.

ST arylazocalixarene prepn ion transport ferrofluid membrane; calixarene arylazo prepn ion transport ferrofluid membrane

IT Membranes, nonbiological

(prepn. and ion transport through ferrofluid membranes by arylazocalixarenes)

IT 14280-50-3, Lead(II) ion, processes 16397-91-4, Manganese(II) ion, processes

RL: PEP (Physical, engineering or chemical process); PROC (Process)

(prepn. and ion transport through ferrofluid membranes by arylazocalixarenes)

IT 299949-96-5P 299949-97-6P

RL: PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)

(prepn. and ion transport through ferrofluid membranes by arylazocalixarenes)

IT 98-54-4 108-95-2, Phenol, reactions 121-57-3, Sulfanilic acid 60835-71-4, 4'-Aminobenzo-15-crown-5

RL: RCT (Reactant)

(prepn. and ion transport through ferrofluid membranes by arylazocalixarenes)

IT 60705-62-6P, p-tert-Butylcalix[4]arene 74339-92-7P

74568-07-3P, Calix[4]arene

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)

L29 ANSWER 4 OF 15 CAPLUS COPYRIGHT 2002 ACS

AN 2000:320209 CAPLUS

DN 133:131776

TI New purification protocol for actinide measurement in excreta based on calixarene chemistry

AU Dinse, C.; Baglan, N.; Cossonnet, C.; Bouvier, C.

CS Service de Dosimetrie, Departement de Protection de la Sante de l'Homme et de Dosimetrie, IPSN, Institut de Protection et de Surete Nucleaire, Fontenay-aux-Roses, F-92265, Fr.

SO Appl. Radiat. Isot. (2000), 53(1-2), 381-386

CODEN: ARISEF; ISSN: 0969-8043

PB Elsevier Science Ltd.

DT Journal

LA English

CC 8-1 (Radiation Biochemistry)

AB The detn. of actinide concn. level in excreta, mainly urine is currently carried out to monitor people potentially exposed to .alpha. emitters. To measure actinides in such samples, specific anal. protocols have been set up. The chem. purifn. uses different chromatog. columns to selectively sep. the actinides and each fraction, after electroplating, is measured by .alpha. spectrometry. To reach 1 mBq l-1 of U, Pu or Am using these protocols, 6 days equally distributed between the chem. purifn. and the measurement are necessary. The protocol proposed here is based on a single extractant, the 1,3,5-trimethoxy-2,4,6-tricarboxy-p-tert-butyl-calix[6]arene, used to selectively sep. U, Pu and Am from the urinary matrix prior to be measured. Using this anal. protocol, U and Pu are quant. and selectively recovered in two different **acidic** back extn. solns. whereas Am is quant. and selectively recovered in the org. phase. Furthermore, the purifn. stage is considerably shortened. The uranium and plutonium amts. are measured in aq. phases using .alpha. spectrometry or inductively coupled plasma-mass spectrometry, whereas Am is measured in the org. phase using .alpha. liq. scintillation (**photon**/electron-rejecting alpha liq. scintillation).

ST urine actinide detn purifn calixarene reagent

IT Extraction

Urine analysis

(purifn. protocol for actinide measurement in excreta based on calixarene chem.)

IT Actinides

RL: ANT (Analyte); ANST (Analytical study)

(purifn. protocol for actinide measurement in excreta based on calixarene chem.)

IT **96107-95-8D**, Calix[6]arene, deriv.

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)

(purifn. protocol for actinide measurement in excreta based on calixarene chem.)

IT 7440-07-5P, Plutonium, preparation 7440-35-9P, Americium, preparation

7440-61-1P, Uranium, preparation

RL: PUR (Purification or recovery); PREP (Preparation)

(purifn. protocol for actinide measurement in excreta based on calixarene chem.)

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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L29 ANSWER 5 OF 15 CAPLUS COPYRIGHT 2002 ACS

AN 2000:164896 CAPLUS

DN 133:39995

TI Use of film sodium-, potassium-, and chloride-selective electrodes for analysis of blood serum

AU Egorov, V. V.; Rakhman'ko, E. M.; Nikolaev, B. A.; Rat'ko, A. A.; Lomako, S. V.

CS NII Fiz.-Khim. Problem, "Belgosuniversiteta", Belarus

SO Vestsi Nats. Akad. Navuk Belarusi, Ser. Khim. Navuk (1999), (3), 5-9

CODEN: VNBFX; ISSN: 1561-8331

PB Belaruskaya Navuka

DT Journal

LA Russian

CC 9-1 (Biochemical Methods)

AB Electrochem. characteristics of K⁺-selective electrode based on compn. of valinomycin and trioctyloxybenzenesulfonic acid. Cl⁻ selective electrode based on trinonyloctadecylammonium chloride, Na⁺-selective electrode based on compn. of sodium tetrakis(4-chloro)phenylborate and 4-tertbutylcalix[4]arene-tetra-Et ether of tetraacetic acid are studied. The electrodes studied have been shown to be suitable for- K⁺, Na⁺ and Cl⁻ detn. in dild. solns. of blood serum in a variant of non-flow-anal. The consistence of measurements is optimized and method of potentiometric detn. of K⁺, Na⁺ and Cl⁻ is offered characterized by a high productivity, correctivity and reproducibility. The results of potentiometric detn. of potassium, sodium and chloride ions have been shown to have a better reproducibility and correlate well with the results of flame-**photometrical** and titrimetrical detns.

ST ion selective membrane electrode blood chloride sodium potassium potentiometry

IT Ion-selective electrodes

(chloride-selective; use of film sodium-, potassium-, and chloride-selective electrodes for anal. of blood serum)

IT Ion-selective electrodes

(potassium-selective; use of film sodium-, potassium-, and chloride-selective electrodes for anal. of blood serum)

IT Ion-selective electrodes

(sodium-selective; use of film sodium-, potassium-, and chloride-selective electrodes for anal. of blood serum)

IT Blood analysis

Potentiometry

(use of film sodium-, potassium-, and chloride-selective electrodes for anal. of blood serum)

IT 7440-09-7, Potassium, analysis 7440-23-5, Sodium, analysis 16887-00-6, Chloride, analysis

RL: ANT (Analyte); ANST (Analytical study)

(use of film sodium-, potassium-, and chloride-selective electrodes for anal. of blood serum)

IT 2001-95-8, Valinomycin 14644-80-5, Sodium tetrakis(4-chloro)phenylborate 69674-64-2, Trinonyloctadecylammonium chloride **97600-39-0**

RL: ARG (Analytical reagent use); DEV (Device component use); ANST

(Analytical study); USES (Uses)

(use of film sodium-, potassium-, and chloride-selective electrodes for anal. of blood serum)

L29 ANSWER 6 OF 15 CAPLUS COPYRIGHT 2002 ACS

AN 1999:603477 CAPLUS

DN 131:243291

TI Method for preparation of cyclic (halomethyl)phenol sulfide

IN Takeya, Haruhiko; Miyanari, Setsuko; Kumagaya, Hitoshi

PA Cosmo Sogo Kenkyusho K. K., Japan; Cosmo Oil Co., Ltd.

SO Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C07D341-00

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11255766	A2	19990921	JP 1998-75055	19980310
OS	CASREACT 131:243291; MARPAT 131:243291				
GI	For diagram(s), see printed CA Issue.				
AB	<p>The title compds. (I; X = H, hydrocarbyl, acyl; Y = H, halomethyl, at least one of plural no. of Ys being halomethyl; m = 1-7; a plural no. of X, Y, and m is same or different; n = 3-12) are prepd. by reaction of cyclic phenol sulfide (I; Y = H; X, m, n = same as above) with a halomethylation agent, preferably chloromethyl Me ether or bromomethyl Me ether, in the presence of a catalyst, preferably AlCl₃, ZnCl₂, BF₃, or TiCl₄. These compds. possess a cage-type structure and are useful as intermediates for antioxidants, catalysts, metal-sequestering agents, photosensors, substrate-specific sensors, and polymers. Thus, 27.5 g sulfur and 17.2 g NaOH were added to 64.5 g 4-tert-butylphenol in 19 mL tetraethylene glycol di-Me ether, gradually heated to 230.degree. over 4 h with removal of water and H₂S formed, cooled to room temp., treated with 500 mL Et₂O, and hydrolyzed 1 N H₂SO₄ to give, after silica gel chromatog., 37.9 g I (n = 4, m = 1, X = H, Y = tert-butyl). The latter compd. (37.9 g) and 10.0 g AlCl₃ were dissolved in 2,000 mL PhMe and allowed to react at 55.degree. for 24 h to give 0.50 g I (X = Y = H, n = 4, m = 1). To the latter compd. (1 g) were added 25 mL chloromethyl Me ether and 50 mg anhyd. ZnCl₂ and refluxed for 5 h under N to give 1.27 g I (X = H, Y = ClCH₂, n = 4, m = 1) (92%).</p>				
ST	cyclic halomethylphenol sulfide prepn; halomethylation cyclic phenol sulfide; aluminum chloride halomethylation catalyst; zinc chloride halomethylation catalyst; boron trifluoride halomethylation catalyst; titanium tetrachloride halomethylation catalyst				
IT	Halomethylation (catalysts, Lewis acids ; prepn. of cyclic (halomethyl)phenol sulfides by halomethylation of cyclic phenol sulfides)				
IT	Methylation catalysts (halomethylation, Lewis acids ; prepn. of cyclic (halomethyl)phenol sulfides by halomethylation of cyclic phenol sulfides)				
IT	Sequestering agents (metal; prepn. of cyclic (halomethyl)phenol sulfides as intermediates for antioxidants, catalysts, metal-sequestering agents, photosensors , substrate-specific sensors, and polymers)				
IT	Antioxidants Catalysts Optical detectors Sensors (prepn. of cyclic (halomethyl)phenol sulfides as intermediates for antioxidants, catalysts, metal-sequestering agents, photosensors , substrate-specific sensors, and polymers)				
IT	Polymers, preparation RL: PNU (Preparation, unclassified); PREP (Preparation) (prepn. of cyclic (halomethyl)phenol sulfides as intermediates for antioxidants, catalysts, metal-sequestering agents, photosensors , substrate-specific sensors, and polymers)				
IT	Halomethylation (prepn. of cyclic (halomethyl)phenol sulfides by halomethylation of cyclic phenol sulfides)				
IT	Lewis acids RL: CAT (Catalyst use); USES (Uses) (prepn. of cyclic (halomethyl)phenol sulfides by halomethylation of cyclic phenol sulfides)				
IT	7446-70-0, Aluminum chloride, uses 7550-45-0, Titanium tetrachloride, uses 7637-07-2, Boron trifluoride, uses 7646-85-7, Zinc chloride, uses RL: CAT (Catalyst use); USES (Uses) (prepn. of cyclic (halomethyl)phenol sulfides by halomethylation of cyclic phenol sulfides)				
IT	98-54-4 107-30-2, Chloromethyl methyl ether 7704-34-9, Sulfur,				

reactions 13057-17-5, Bromomethyl methyl ether
 RL: RCT (Reactant)
 (prepn. of cyclic (halomethyl)phenol sulfides by halomethylation of cyclic phenol sulfides)

IT 182496-55-5P **182496-69-1P**
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
 (prepn. of cyclic (halomethyl)phenol sulfides by halomethylation of cyclic phenol sulfides)

IT 244087-92-1P 244087-94-3P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (prepn. of cyclic (halomethyl)phenol sulfides by halomethylation of cyclic phenol sulfides)

L29 ANSWER 7 OF 15 CAPLUS COPYRIGHT 2002 ACS
 AN 1999:514520 CAPLUS
 DN 131:272201
 TI Synthesis and **photochemical** reaction of novel p-alkylcalix[6]arene derivatives containing acryloyl or methacryloyl groups
 AU Iyo, Masami; Tsutsui, Kosuke; Kameyama, Atsushi; Nishikubo, Tadatoimi
 CS Department of Applied Chemistry, Faculty of Engineering, Kanagawa University, Yokohama, 221-8686, Japan
 SO J. Polym. Sci., Part A: Polym. Chem. (1999), 37(16), 3071-3078
 CODEN: JPACEC; ISSN: 0887-624X
 PB John Wiley & Sons, Inc.
 DT Journal
 LA English
 CC 35-2 (Chemistry of Synthetic High Polymers)
 AB Novel polyfunctional (meth)acrylates with a calixarene backbone [calixarene (meth)acrylates] were synthesized in good yields by certain reactions of p-methylcalix[6]arene (1a) or p-tert-butylcalix[6]arene (1b) with (meth)acrylate derivs. such as acryloyl chloride, methacryloyl chloride, (2-methacryloxy)ethyl isocyanate, and glycidyl methacrylate. Polyfunctional acrylate 6a having poly(oxyethylene) spacer chain between 1a and acrylate groups was also synthesized by the reaction of the poly(oxyethylene) modified 1a with acrylic acid. Calixarene acrylate 6a was liq. at room temp., although the other calixarene (meth)acrylates were solid at room temp. The initial decompn. temp. (IDT) of the resulting calixarene (meth)acrylates was measured by the thermogravimetric anal. to evaluate the thermal stability, and it was found that some of the IDTs of the calixarene acrylates were over 400.degree.. This means that calixarene (meth)acrylates have very good thermal stability. The **photopolymer.** of the resulting some calixarene (meth)acrylates with (2-phenyloxy)ethyl acrylate as a reactive diluent in the presence of **photoinitiator** proceeded smoothly upon irradiation with UV light. Therefore, polyfunctional (meth)acrylates with a calixarene backbone can be expected to be novel and thermally stable **photoreactive** acrylate oligomers.

ST calixarene deriv acrylate prep radical **photopolymer**;
 methacrylate calixarene deriv prep radical **photopolymer**; thermal stability calixarene deriv acrylate methacrylate polymer

IT Polymerization
 (**photochem.**, radical; synthesis, properties and **photopolymer.** of novel p-alkylcalix[6]arene derivs. contg. acryloyl or methacryloyl groups)

IT Solubility
 (synthesis, properties and **photopolymer.** of novel p-alkylcalix[6]arene derivs. contg. acryloyl or methacryloyl groups)

IT **78092-53-2P**, p-tert-Butylcalix[6]arene **79942-31-7P**, p-Methylcalix[6]arene
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
 (intermediate; synthesis and **photochem.** reaction of novel p-alkylcalix[6]arene derivs. contg. acryloyl or methacryloyl groups)

IT 220953-77-5P 221550-29-4P 245416-16-4P 245416-18-6P 245416-19-7P
 RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
 (monomer; synthesis and **photochem.** reaction of novel

p-alkylcalix[6]arene derivs. contg. acryloyl or methacryloyl groups)
IT 79-10-7, 2-Propenoic **acid**, reactions 98-54-4 106-44-5,
reactions 106-91-2 107-07-3, 2-Chloroethanol, reactions 814-68-6,
2-Propenoyl chloride 920-46-7, Methacryloyl chloride 30525-89-4,
Paraformaldehyde 30674-80-7, (2-Methacryloxy)ethyl isocyanate
RL: RCT (Reactant)
(starting material; synthesis and **photochem.** reaction of
novel p-alkylcalix[6]arene derivs. contg. acryloyl or methacryloyl
groups)
IT 245416-15-3P 245416-17-5P 245416-20-0P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(synthesis and **photochem.** reaction of novel
p-alkylcalix[6]arene derivs. contg. acryloyl or methacryloyl groups)
IT 245416-22-2P 245416-23-3P 245416-24-4P 245416-25-5P 245416-26-6P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(synthesis, properties and **photopolymn.** of novel
p-alkylcalix[6]arene derivs. contg. acryloyl or methacryloyl groups)
RE.CNT 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD
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L29 ANSWER 8 OF 15 CAPLUS COPYRIGHT 2002 ACS
AN 1999:251900 CAPLUS
DN 131:5011
TI Noncovalent assembly of a fifteen-component hydrogen-bonded nanostructure
AU Jolliffe, Katrina A.; Timmerman, Peter; Reinhoudt, David N.
CS Laboratory of Supramolecular Chemistry and Technology, University of
Twente, Enschede, NL-7500 AE, Neth.
SO Angew. Chem., Int. Ed. (1999), 38(7), 933-937
CODEN: ACIEF5; ISSN: 1433-7851
PB Wiley-VCH Verlag GmbH
DT Journal
LA English
CC 22-12 (Physical Organic Chemistry)
AB H-bonded supramol. self-assembly of a four-story structure comprising
three M-C-M'-X-M'-C-M (2) units (M, M' = melamine units attached to
opposite arom. rings of calix[4]arene scaffold C, with the internal two
melamines M' connected through linker X) and 12 5,5-diethylbarbituric
acid (DEB) mols. with each floor consisting of 3 melamines and 3
DEBs arrayed as a rosette is reported. The formation of (2)3(DEB)12
exhibited neg. cooperativity: (2)3(DEB)12 only began to form at ratio
2:DEB > 1:3, and when (2)3(DEB)12 was mixed with the nonlinked M-C-M (1),
only two-story structure (1)3(DEB)6 was formed. (2)3(DEB)12 formed
stereoselectively as the sss diastereomer (s = staggered orientation of
the melamines in the different floors) as opposed to ses (e = eclipsed).
Both 2 and 1 exhibit self-sorting: mixts. of 2 and 1 in 1:2 ratio with
excess DEB show exclusively the formation of homomeric assemblies
(2)3(DEB)12 and (1)3(DEB)6; heteromeric assemblies [e.g., (2)2(1)2(DEB)12]
were not obsd.
ST hydrogen bonding self assembly melamine calixarene barbituric **acid**

nanostructure; supramol melamine calixarene barbituric **acid**
 nanostructure self assembly
 IT Hydrogen bond
 NMR (nuclear magnetic resonance)
 Nanostructures
 (H-bonded self-assembly of a 4-story hydrogen-bonded nanostructure
 comprising calix[4]arene-bound melamine and barbituric **acid**
 units)
 IT Molecular mechanics
 (NMR, MALDI-TOF, and mol. mechanics study of H-bonded self-assembly of
 a 4-story hydrogen-bonded nanostructure comprising calix[4]arene-bound
 melamine and barbituric **acid** units)
 IT Metacyclophanes
 RL: FMU (Formation, unclassified); PRP (Properties); FORM (Formation,
 nonpreparative)
 (calixarene-based nanostructures; H-bonded self-assembly of a 4-story
 hydrogen-bonded nanostructure comprising calix[4]arene-bound melamine
 and barbituric **acid** units)
 IT Cooperative phenomena
 (neg.; H-bonded self-assembly of a 4-story hydrogen-bonded
 nanostructure comprising calix[4]arene-bound melamine and barbituric
acid units)
 IT Laser desorption mass spectrometry
 (photoionization, matrix-assisted; H-bonded self-assembly of
 a 4-story hydrogen-bonded nanostructure comprising calix[4]arene-bound
 melamine and barbituric **acid** units)
 IT Diastereomers
 (relative energy of staggered and eclipsed diastereomers; H-bonded
 self-assembly of a 4-story hydrogen-bonded nanostructure comprising
 calix[4]arene-bound melamine and barbituric **acid** units)
 IT Self-assembly
 (stereoselective; H-bonded self-assembly of a 4-story hydrogen-bonded
 nanostructure comprising calix[4]arene-bound melamine and barbituric
acid units)
 IT 201288-88-2 225645-70-5 225645-71-6 225645-72-7 225645-73-8
 225645-75-0
 RL: FMU (Formation, unclassified); PRP (Properties); FORM (Formation,
 nonpreparative)
 (H-bonded self-assembly of a 4-story hydrogen-bonded nanostructure
 comprising calix[4]arene-bound melamine and barbituric **acid**
 units)
 IT 57-44-3, 5,5-Diethylbarbituric **acid**
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (H-bonded self-assembly of a 4-story hydrogen-bonded nanostructure
 comprising calix[4]arene-bound melamine and barbituric **acid**
 units)
 IT 225645-61-4P 225645-62-5P
 RL: PEP (Physical, engineering or chemical process); RCT (Reactant); SPN
 (Synthetic preparation); PREP (Preparation); PROC (Process)
 (H-bonded self-assembly of a 4-story hydrogen-bonded nanostructure
 comprising calix[4]arene-bound melamine and barbituric **acid**
 units)
 IT 108-77-0, Cyanuric chloride 109-73-9, Butylamine, reactions 7664-41-7,
 Ammonia, reactions 51857-17-1 108467-99-8 **169436-70-8**
 RL: RCT (Reactant)
 (H-bonded self-assembly of a 4-story hydrogen-bonded nanostructure
 comprising calix[4]arene-bound melamine and barbituric **acid**
 units)
 IT 225645-63-6P 225645-64-7P 225645-65-8P 225645-66-9P 225645-67-0P
 225645-69-2P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
 (H-bonded self-assembly of a 4-story hydrogen-bonded nanostructure
 comprising calix[4]arene-bound melamine and barbituric **acid**
 units)
 IT 7440-22-4, Silver, analysis
 RL: ARU (Analytical role, unclassified); ANST (Analytical study)
 (MALDI labeling agent; H-bonded self-assembly of a 4-story

hydrogen-bonded nanostructure comprising calix[4]arene-bound melamine
and barbituric acid units)

RE.CNT 45 THERE ARE 45 CITED REFERENCES AVAILABLE FOR THIS RECORD
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L29 ANSWER 9 OF 15 CAPLUS COPYRIGHT 2002 ACS

AN 1998:486746 CAPLUS

DN 129:189003

TI Effect of various cations on the acidity of p-
sulfonatocalixarenes

AU Suga, Kosaku; Ohzono, Takuya; Negishi, Makoto; Deuchi, Kouji; Morita,
Yutaka

CS Department of Biomolecular Engineering, Tokyo Institute of Technology,
Yokohama, 226, Japan

SO Supramol. Sci. (1998), 5(1-2), 9-14
CODEN: SUSCFX; ISSN: 0968-5677

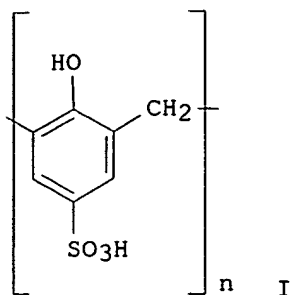
PB Elsevier Science Ltd.

DT Journal

LA English

CC 22-12 (Physical Organic Chemistry)

GI



- AB **Photometric** and pH-metric titrn. curves of p-sulfonatocalixarenes, C[n]ASO₃H (I; n = 4, 6, 8), were measured in the presence of electrolytes of various cations. These titrn. curves revealed that the presence of tetramethylammonium (TMA⁺) and tetraethylammonium (TEA⁺) ions largely decreased pK_a values for C[n]ASO₃H (n = 4, 6, 8), while alkali and alk.-earth metal cations had small effects. Comparison of the pH dependence of absorption spectra for C[n]ASO₃H (n = 4, 6, 8) with that for corresponding monomer, p-hydroxybenzenesulfonate, indicated that the small values of pK_{a1} and pK_{a2} obsd. for C[8]ASO₃H were attributable to disocn. of its OH groups in this compd. The dependence of pK_a values for C[4]ASO₃H and p-hydroxybenzenesulfonate on the concn. of NaCl was due to the difference in their activity coeffs. before and after their deprotonation steps estd. on the basis of Debye-Huckel theory. These results suggested that C[n]ASO₃H (n = 4, 6, 8) hardly formed stable complexes with Na⁺ or other alkali metal cations in aq. solns. while C[n]ASO₃H (n = 4, 6, 8) formed stable complexes with tetraalkylammonium cations. It was also shown that the p-sulfonatophenol or p-sulfonatophenoxide units in the calixarene interacted independently with ionic atmospheres formed around the phenol units.
- ST calixarene ionization const cation effect
- IT Alkali metal ions
Alkaline earth ions
RL: PRP (Properties)
(activity effect; effect of various cations on the **acidity** of p-sulfonatocalixarenes)
- IT Activity (thermodynamic)
(alkali metal cation effects; effect of various cations on the **acidity** of p-sulfonatocalixarenes)
- IT Ionization constant
(effect of various cations on the **acidity** of p-sulfonatocalixarenes)
- IT Metacyclophanes
Sulfonic **acids**, properties
RL: PRP (Properties)
(effect of various cations on the **acidity** of p-sulfonatocalixarenes)
- IT Quaternary ammonium compounds, properties
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(inclusion effect; effect of various cations on the **acidity** of p-sulfonatocalixarenes)
- IT Inclusion reaction
(of quaternary ammonium ions; effect of various cations on the **acidity** of p-sulfonatocalixarenes)
- IT 51-92-3, Tetramethylammonium ion 66-40-0 14127-61-8, Calcium ion, properties 17341-25-2, Sodium ion, properties 22541-12-4, Barium ion, properties 24203-36-9, Potassium ion, properties
RL: PRP (Properties)
(effect of various cations on the **acidity** of p-sulfonatocalixarenes)
- IT 102088-39-1 **112269-92-8** 137407-62-6
RL: PRP (Properties)
(ionization const. in presence of electrolytes; effect of various

cations on the **acidity** of p-sulfonatocalixarenes)

IT 96107-96-9 105190-41-8 110242-20-1
 RL: PRP (Properties)
 (ionization const.; effect of various cations on the **acidity** of p-sulfonatocalixarenes)

IT 825-90-1, Sodium p-hydroxybenzenesulfonate
 RL: PRP (Properties)
 (monomer unit; effect of various cations on the **acidity** of p-sulfonatocalixarenes)

L29 ANSWER 10 OF 15 CAPLUS COPYRIGHT 2002 ACS
 AN 1998:151718 CAPLUS
 DN 128:252015
 TI Complexes of p-tert-butylcalix[5]arene with lanthanides: synthesis, structure and **photophysical** properties
 AU Charbonniere, Loic J.; Balsiger, Christian; Schenk, Kurt J.; Bunzli, Jean-Claude G.
 CS Institute Inorganic Analytical Chemistry, BCH, University Lausanne, Lausanne, CH-1015, Switz.
 SO J. Chem. Soc., Dalton Trans. (1998), (3), 505-510
 CODEN: JCDTBI; ISSN: 0300-9246
 PB Royal Society of Chemistry
 DT Journal
 LA English
 CC 78-7 (Inorganic Chemicals and Reactions)
 Section cross-reference(s): 68, 73, 74, 75

AB Spectrophotometric pKa detn. for p-tert-butylcalix[5]arene (H5L) in acetonitrile (pKa1 = 11.5 +/- 0.7, pKa2 = 15.4 +/- 1.0 at 298 K) evidenced both intra- and inter-mol. stabilization of the deprotonated forms. The dimeric complexes [Ln2(H2L)2(DMSO)4] (Ln = EuIII, GdIII, or TbIII) were isolated from THF in the presence of NaH as base. A single-crystal anal. of [Eu2(H2L)2(DMSO)4].cntdot.10THF (triclinic space group P.hivin.1, R1 = 0.112) showed the deformation of the cone conformation of the calixarene upon complexation and coordination of DMSO mols. by inclusion through the hydrophobic cavity of the ligand. A **photophys.** study revealed a total quenching of the metal luminescence by a ligand-to-metal charge-transfer state in the case of EuIII while luminescence of Tb III is sensitized (quantum yield in THF: 5.1%). The temp.-dependent lifetime of TbIII is analyzed in terms of a potential metal-to-ligand back-transfer process.

ST crystal structure europium butylcalixarene DMSO dimeric; europium butylcalixarene DMSO dimeric prepn structure; rare earth butylcalixarene prepn structure **photophysics**; calixarene rare earth prepn structure **photophysics**; **photophysics** rare earth butylcalixarene DMSO dimeric; luminescence rare earth butylcalixarene DMSO dimeric; conformation europium butylcalixarene DMSO dimeric complex; **acidity** const calixarene

IT Dissociation constant
 (**acidity** const.; of butylcalix[5]arene)

IT Rare earth alcohol complexes
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (calixarene; prepn., crystal structure and electronic and luminescence spectra of rare earth butylcalix[5]arene DMSO dimeric complexes)

IT UV and visible spectra
 (charge transfer; of rare earth butylcalix[5]arene DMSO dimeric complexes)

IT Conformation
 Crystal structure
 Luminescence quenching
 Molecular structure
 (of europium butylcalix[5]arene DMSO dimeric complex)

IT Luminescence
 (of rare earth butylcalix[5]arene DMSO dimeric complexes)

IT 81475-22-1, p-tert-Butylcalix[5]arene
 RL: PRP (Properties); RCT (Reactant)
 (**acidity** consts. and complexation with rare earth metals)

IT 204931-37-3P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (prepn. and crystal structure)
 IT 204931-35-1P 204931-38-4P 204931-39-5P
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (prepn. and electronic and luminescence spectra)

L29 ANSWER 11 OF 15 CAPLUS COPYRIGHT 2002 ACS
 AN 1998:88737 CAPLUS
 DN 128:102474
 TI **Photochemically** size-controllable dendrimers including a
 1,3-alternate calix[4]arene as a core and azobenzene moieties as branches
 AU Nagasaki, Takeshi; Noguchi, Akio; Matsumoto, Takeo; Tamagaki, Seizo;
 Ogino, Kenji
 CS Fac. Eng., Osaka City Univ., Osaka, 558, Japan
 SO An. Quim. Int. Ed. (1997), 93(5), 341-346
 CODEN: AQIEFZ
 PB Springer-Verlag Iberica
 DT Journal
 LA English
 CC 35-5 (Chemistry of Synthetic High Polymers)
 Section cross-reference(s): 36

AB **Photo**-responsive dendrimers which involve a 1,3-alternate
 conformer of calix[4]arene as a core and azobenzene skeletons as branches
 were synthesized and characterized. The particle size of the
photo-responsive mols. is controllable by exposure to variable
 levels of UV or visible light and darkness; light induces contraction of
 particles and broadens the polydispersity. Presumably the contracted
 particles have higher content of cis azobenzene and larger steric
 hindrance than the expanded trans forms. Expansion and contraction were
 monitored using dynamic light scattering and gel permeation chromatog.

ST calixarene **photoresponsive** dendrimer prepn
photoisomerization; azobenzene calixarene particle size control
 light

IT Light-sensitive materials
 Particle size
Photoisomerization
 Steric hindrance
 (**photochem.** control of particle size of dendrimers of
 1,3-alternate calix[4]arene core and azobenzene deriv. branches)

IT Metacyclophanes
 RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC
 (Process)
 (**photochem.** control of particle size of dendrimers of
 1,3-alternate calix[4]arene core and azobenzene deriv. branches)

IT Polyethers, preparation
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (polyamide-, dendrimers; **photochem.** control of particle size
 of dendrimers of 1,3-alternate calix[4]arene core and azobenzene deriv.
 branches)

IT Dendritic polymers
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (polyamides, polyether; **photochem.** control of particle size
 of dendrimers of 1,3-alternate calix[4]arene core and azobenzene deriv.
 branches)

IT Polyamides, preparation
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (polyether-, dendrimers; **photochem.** control of particle size
 of dendrimers of 1,3-alternate calix[4]arene core and azobenzene deriv.
 branches)

IT **281-54-9D**, Calix[4]arene, coupling products with azobenzene
 dendrimers
 RL: PRP (Properties); RCT (Reactant)
 (core and fourth generation; **photochem.** control of particle
 size of dendrimers of 1,3-alternate calix[4]arene core and azobenzene
 deriv. branches)

IT 194611-45-5P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)

(first generation; **photochem.** control of particle size of dendrimers of 1,3-alternate calix[4]arene core and azobenzene deriv. branches)

IT 76-05-1, Trifluoroacetic **acid**, reactions 96-32-2, Methyl bromoacetate 2497-38-3, 4-Carboxy-4'-hydroxyazobenzene 7719-09-7, Thionyl chloride 24424-99-5
 RL: RCT (Reactant)

(**photochem.** control of particle size of dendrimers of 1,3-alternate calix[4]arene core and azobenzene deriv. branches)

IT 194611-44-4P, 4-[N,N-Bis(2-tert-butoxycarbonylaminoethyl)amino]carbonyl-4'-hydroxyazobenzene 194611-47-7P 194611-49-9P 194611-51-3P 194611-53-5P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)

(**photochem.** control of particle size of dendrimers of 1,3-alternate calix[4]arene core and azobenzene deriv. branches)

IT 194611-50-2P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)

(second generation; **photochem.** control of particle size of dendrimers of 1,3-alternate calix[4]arene core and azobenzene deriv. branches)

IT 194611-52-4DP, coupling products with 1,3-alternate calix[4]arene
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(third generation; **photochem.** control of particle size of dendrimers of 1,3-alternate calix[4]arene core and azobenzene deriv. branches)

L29 ANSWER 12 OF 15 CAPLUS COPYRIGHT 2002 ACS
 AN 1996:541137 CAPLUS
 DN 125:315428
 TI Synthesis and Characterization of Novel Acyclic, Macrocyclic, and Calix[4]arene Ruthenium(II) Bipyridyl Receptor Molecules That Recognize and Sense Anions
 AU Szemes, Fridrich; Hesek, Dusan; Chen, Zheng; Dent, Simon W.; Drew, Michael G. B.; Goulden, Alistair J.; Graydon, Andrew R.; Grieve, Alan; Mortimer, Roger J.; et al.
 CS Inorganic Chemistry Laboratory, University of Oxford, Oxford, OX1 3QR, UK
 SO Inorg. Chem. (1996), 35(20), 5868-5879
 CODEN: INOCAJ; ISSN: 0020-1669
 DT Journal
 LA English
 CC 79-3 (Inorganic Analytical Chemistry)
 Section cross-reference(s): 28, 29, 75

AB The Lewis **acidic** redox-active and **photoactive** ruthenium(II) bipyridyl moiety in combination with amide (CO-NH) groups was incorporated into acyclic, macrocyclic, and lower rim calix[4]arene structural frameworks to produce a new class of anion receptor with the dual capability of sensing anionic guest species via electrochem. and optical methodologies. Single-crystal x-ray structures of (1)Cl and (11)H2PO4 reveal the importance of hydrogen bonding to the overall anion complexation process. In the former complex, six hydrogen bonds (two amide and four C-H groups) stabilize the Cl- anion and three hydrogen bonds (two amide and one calix[4]arene hydroxyl) effect H2PO4-complexation with 11. 1H NMR titrn. studies in deuterated DMSO solns. reveal these receptors form strong and, in the case of the macrocyclic 5 and calix[4]arene-contg. receptor 11, highly selective complexes with H2PO4-. Cyclic and square-wave voltammetric studies demonstrated these receptors to electrochem. recognize Cl-, Br-, H2PO4-, and HSO4- anions. The calix[4]arene anion receptor 11 selectively electrochem. senses H2PO4- in the presence of 10-fold excess amts. of HSO4- and Cl-. Fluorescence emission spectral recognition of H2PO4- in DMSO solns. is displayed by 3, 5, and 11.

ST calixarene ruthenium bipyridyl complex anion receptor; macrocyclic ruthenium bipyridyl anion receptor; acyclic ruthenium bipyridyl anion receptor

IT Crystal structure
 (synthesis and characterization of novel acyclic, macrocyclic, and calix[4]arene ruthenium(II) bipyridyl receptor mols. for recognition

and sensing of anions)

IT Voltammetry
(cyclic, anion recognition and sensing by cyclic and square-wave voltammetry using calix[4]arene-contg. receptors)

IT Spectrochemical analysis
(fluorometric, anion recognition and sensing by fluorescence using calix[4]arene-contg. receptors)

IT Cyclophanes
RL: ARG (Analytical reagent use); PNU (Preparation, unclassified); PRP (Properties); ANST (Analytical study); PREP (Preparation); USES (Uses)
(meta-, synthesis and characterization of novel acyclic, macrocyclic, and calix[4]arene ruthenium(II) bipyridyl receptor mols. for recognition and sensing of anions)

IT Voltammetry
(square-wave, anion recognition and sensing by cyclic and square-wave voltammetry using calix[4]arene-contg. receptors)

IT 14066-20-7 14996-02-2, Sulfate (HSO41-) 16887-00-6, Chloride, analysis 24959-67-9, Bromide, analysis
RL: ANT (Analyte); ANST (Analytical study)
(anion recognition and sensing by cyclic and square-wave voltammetry using calix[4]arene-contg. receptors)

IT 182864-42-2P 183071-86-5P
RL: ARG (Analytical reagent use); PNU (Preparation, unclassified); PRP (Properties); ANST (Analytical study); PREP (Preparation); USES (Uses)
(crystal structure and characterization of novel acyclic, macrocyclic, and calix[4]arene ruthenium(II) bipyridyl receptor mols. for recognition and sensing of anions)

IT 152387-93-4P
RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation)
(ligand; synthesis and characterization of novel acyclic, macrocyclic, and calix[4]arene ruthenium(II) bipyridyl receptor mols. for recognition and sensing of anions)

IT 121702-02-1P 182864-33-1P 182864-35-3P
RL: ARG (Analytical reagent use); PNU (Preparation, unclassified); ANST (Analytical study); PREP (Preparation); USES (Uses)
(synthesis and characterization of novel acyclic, macrocyclic, and calix[4]arene ruthenium(II) bipyridyl receptor mols. for recognition and sensing of anions)

IT 152465-62-8P 156976-29-3P 156976-33-9P 182864-25-1P 182864-27-3P 182864-29-5P
RL: ARG (Analytical reagent use); PNU (Preparation, unclassified); PRP (Properties); ANST (Analytical study); PREP (Preparation); USES (Uses)
(synthesis and characterization of novel acyclic, macrocyclic, and calix[4]arene ruthenium(II) bipyridyl receptor mols. for recognition and sensing of anions)

IT 121633-89-4P **154204-25-8P**, 5,11,17,23-Tetrakis(1,1-dimethylethyl)-25,27-bis(2-aminoethoxy)-26,28-dihydroxycalix[4]arene 156834-21-8P 156834-23-0P, 4,4'-Bis((2-methoxyethyl)carbamoyl)-2,2'-bipyridine 182864-30-8P 182864-31-9P 182864-36-4P 182864-37-5P 182864-38-6P 182864-39-7P 182864-40-0P
RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation)
(synthesis and characterization of novel acyclic, macrocyclic, and calix[4]arene ruthenium(II) bipyridyl receptor mols. for recognition and sensing of anions)

IT 104-94-9, p-Anisidine 109-85-3, 2-Methoxyethylamine 110-86-1, Pyridine, reactions 121-44-8, reactions 632-02-0, 3-Chloropropyl p-tosylate 929-59-9, 2,2'-(Ethylenedioxy)diethylamine 1122-58-3, 4-(Dimethylamino)pyridine 6315-89-5, 4-Aminoveratrole 7328-91-8, 2,2-Dimethyl-1,3-diaminopropane 72460-28-7, 4,4'-Bis(chlorocarbonyl)-2,2'-bipyridine
RL: RCT (Reactant)
(synthesis and characterization of novel acyclic, macrocyclic, and calix[4]arene ruthenium(II) bipyridyl receptor mols. for recognition and sensing of anions)

DN 125:154141
 TI **Photophysical** properties of lanthanide dinuclear complexes with
 p-nitro-calix[8]arene
 AU Buenzli, Jean-Claude G.; Ihringer, Frederic
 CS Universite de Lausanne, Institut de Chimie Minerale et Analytique, BCH
 1402, Lausanne, CH-1015, Switz.
 SO Inorg. Chim. Acta (1996), 246(1-2), 195-205
 CODEN: ICHAA3; ISSN: 0020-1693
 DT Journal
 LA English
 CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)
 Section cross-reference(s): 73
 AB The ligand p-nitrocalix[8]arene, n-LH8, was synthesized and its
acidity consts. were detd. at 25.degree.C in H2O/THF 70/30
 vol./vol. by a potentiometric method: pKa1 < 0, pKa2 = 2.6 +/- 0.1, pKa3
 = 7.2 +/- 0.2, pKa4 = 10.2 +/- 0.2, and pKa5-8 > 12. Upon reaction of
 n-LH8 with lanthanide nitrates in DMF contg. an excess of triethylamine,
 lanthanide dinuclear complexes are isolated whose elemental analyses
 correspond to the formula [Ln1Ln2(n-LH2)(DMF)x](DMF)y(EtOH)z. Solvation
 is difficult to control and different crystn. or drying conditions yield
 compds. with different solvation. When two Ln(III) ions are added to the
 soln., compds. are isolated which contain a mixt. of the homo- and
 heterodinuclear species. A small size discriminating effect is evidenced,
 larger Ln(III) ions being apparently favored. Anal. of the luminescence
 of the Eu(5D0) level reveals the following features: (i) the series of
 complexes with Ln1 = Eu, and Ln2 = Nd, Gd, Tb, Ho appears to be approx.
 isostructural, (ii) the two metal ion sites are similar and possess a low
 site symmetry, and (iii) the Eu(III) environment is not well defined,
 either because the compds. behave like 'glasses', with ligand mols.
 adopting several comparable configurations, or because the solvent mols.
 completing the coordination polyhedron of the Eu(III) ion occupy
 statistical sites rendering the structure somewhat disordered. A
photophys. study of the ligand n-LH8, of the homodinuclear
 complexes with Ln1 = Ln2 = Eu, Gd, Tb, Lu and of the heterodinuclear
 complexes has been performed. Compared to the situation for complexes
 with p-tert-butylcalix[8]arene, the ligand excited states are shifted to
 lower energy, henceforth the ligand-to-Tb(III) energy transfer no more
 occurs while the transfer to the Eu(III) ion is favored, the Eu(5D0) level
 and the ligand states being almost in resonance. The replacement of the
 p-tert-Bu groups by the electron-attracting nitro groups shifts the
 ligand-to-metal charge-transfer (LMCT) state of the Eu-contg. compds. to
 higher energy, which reduces the amt. of mixing between the Eu(7F) and the
 LMCT states, resulting in a less efficient quenching of the Eu(5D0)
 luminescence and in a less enhanced 5D0 -> 7F0 transition.
 Nevertheless, the latter still exhibits an unusually large oscillator
 strength (ca. 10⁻⁷, epsilon = 0.84 l-mol⁻¹-cm⁻¹). Europium-to-
 lanthanide (Ln = Nd, Ho) energy transfer processes in heterodinuclear
 compds. allow one to est. the intermol. Eu-Ln distance to 10.3-10.5 .ANG.,
 a value close to that reported for the p-tert-butylcalix[8]arene
 complexes. In conclusion, this study demonstrates the potential of
 calixarenes as host mols. for spectroscopically active metal ions since a
 simple modification of the para-substituents induces large differences in
 the **photophys.** properties of the dinuclear lanthanide complexes.
 ST **photophys** property lanthanide dinuclear complex nitrocalixarene
 IT Energy level splitting
 Luminescence
 Ultraviolet and visible spectra
 (**photophys.** properties of lanthanide dinuclear complexes with
 p-nitro-calix[8]arene)
 IT Rare earth compounds
 RL: PEP (Physical, engineering or chemical process); PRP (Properties);
 PROC (Process)
 (complexes, dinuclear; **photophys.** properties of lanthanide
 dinuclear complexes with p-nitro-calix[8]arene)
 IT Energy transfer
 (**photochem.**, **photophys.** properties of lanthanide

IT dinuclear complexes with p-nitro-calix[8]arene)
 IT **109081-46-1P**
 RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP
 (Preparation)
 (in prepn. of lanthanide dinuclear complexes with p-nitro-
 calix[8]arene)
 IT **109081-46-1D**, europium and neodymium complexes
 RL: RCT (Reactant)
 (photophys. properties of lanthanide dinuclear complexes)
 IT 7440-00-8D, Neodymium, calix[8]arene complex, sold soln. with rare earth
 calixarene complexes 7440-53-1D, Europium, calix[8]arene complex, sold
 soln. with rare earth calixarene complexes 7440-54-2D, Gadolinium,
 calix[8]arene complex, sold soln. with rare earth calixarene complexes
 7440-60-0D, Holmium, calix[8]arene complex, sold soln. with rare earth
 calixarene complexes 180140-71-0D, solid solns. with gadolinium and
 holmium and neodymium and terbium complexes 180140-72-1 180140-73-2
 180140-74-3D, solid soln. with europium complex 180140-75-4
 180140-76-5 180140-77-6 180140-78-7 180140-79-8D, solid soln. with
 europium complex 180140-81-2D, solid soln. with europium complex
 RL: PEP (Physical, engineering or chemical process); PRP (Properties);
 PROC (Process)
 (photophys. properties of lanthanide dinuclear complexes with
 p-nitro-calix[8]arene)
 IT 68-12-2, DMF, properties 7440-27-9D, Terbium, calix[8]arene complex,
 sold soln. with rare earth calixarene complexes
 RL: PEP (Physical, engineering or chemical process); PRP (Properties);
 PROC (Process)
 (photophys. properties of lanthanide dinuclear complexes with
 p-nitro-calix[8]arene contg.)
 IT **68971-82-4**
 RL: RCT (Reactant)
 (reaction with nitric acid in prepn. of p-nitro-
 calix[8]arene)

L29 ANSWER 14 OF 15 CAPLUS COPYRIGHT 2002 ACS

AN 1995:65556 CAPLUS

DN 122:162770

TI **Photosynthetic** membranes. Part 32. Transport properties of
 alkali metal cations through **photografted** cryptand membranes
 immobilizing calix[8]arene

AU Bellobono, Ignazio Renato; Righetto, Luca; D'Ambrosio, Andrea; Azimonti,
 Giovanna

CS Department Physical Chemistry and Electrochemistry, University Milan,
 Milan, I-20133, Italy

SO Process Technol. Proc. (1994), 11(SEPARATION TECHNOLOGY), 885-93
 CODEN: PTPREM; ISSN: 0921-8610

DT Journal

LA English

CC 38-3 (Plastics Fabrication and Uses)

AB Membranes immobilizing 1.00 .times. 10⁻³ - 4.50 .times. 10⁻² mol. Kg⁻¹ of
 calix[8]arene have been prepd., by **photografting** a 1:3 wt/wt
 mixt. of a com. acrylate polyester (Ebecryl 810) and tetraethyleneglycol
 diacrylate, **photoinitiated** with 6 wt % of 1,2-diphenyl-2,2-
 dimethoxyethanone and **photocatalyzed** with 3.5 wt % of
 oxodi(8-quinolyloxo) vanadic (V) **acid** allyl ester, onto an
 ultrafiltration cellulose membrane immobilizing 20 % of active carbon in
 the **photochem.** grafted layer. Solns. contg. 1.00 .times. 10⁻²,
 6.00 .times. 10⁻², or 1.0 .times. 10⁻¹ M LiOH, NaOH, KOH, RbOH, or CsOH
 were recirculated on the microporous side of the support, and a 0.05 M
 formate/formic **acid** buffer at const. ionic strength and pH 3.5
 on the side of the grafted cryptand membrane. Transport rates of alkali
 metal ions were measured at 20.+-1.degree.C as a function of calixarene
 (cc) and alkali metal hydroxides (cMe⁺) concns., as well as of geometric
 surface area of the membrane. Transport rates expressed as mol alkali
 metal ion transferred per unit time and per unit transmembrane pressure
 difference, were found to be directly proportional to cc, independently on
 cMe⁺ in soln. and surface area of membrane. The proportionally consts.,

r, are discussed in terms of selectivity and facilitated transport mechanism, envisaged by this kind of behavior. The values of r also compared with parameters obtained by exptl. data reported in the literature for the three-phase liq./liq. extn. process.

ST **photografted** cryptand membrane immobilizing calixarene; acrylate polyester **photografted** cryptand membrane; transport alkali metal cryptand membrane

IT Membranes
(transport properties of alkali metal cations through **photografted** cryptand membranes immobilizing calix[8]arene)

IT Cations
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(transport properties of alkali metal cations through **photografted** cryptand membranes immobilizing calix[8]arene)

IT **82040-66-2**, Calix[8]arene
RL: NUU (Other use, unclassified); USES (Uses)
(transport properties of alkali metal cations through **photografted** cryptand membranes immobilizing calix[8]arene)

IT 7439-93-2, Lithium, processes 7440-09-7, Potassium, processes 7440-17-7, Rubidium, processes 7440-23-5, Sodium, processes 7440-46-2, Cesium, processes
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(transport properties of alkali metal cations through **photografted** cryptand membranes immobilizing calix[8]arene)

IT 161574-36-3
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(transport properties of alkali metal cations through **photografted** cryptand membranes immobilizing calix[8]arene)

L29 ANSWER 15 OF 15 CAPLUS COPYRIGHT 2002 ACS

AN 1994:19221 CAPLUS

DN 120:19221

TI Electrophotographic toners containing charge-controlling resin and calixarene compound

IN Ueda, Hideaki

PA Minolta Camera Kk, Japan

SO Jpn. Kokai Tokkyo Koho, 13 pp.
CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G03G009-097
ICS G03G009-08

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 05119535	A2	19930518	JP 1991-277525	19911024
GI	For diagram(s), see printed CA Issue.				
AB	The neg. charging toners contain a thermoplastic resin, a colorant, and 0.1-10 parts/100 parts thermoplastic resin of a charge-controlling resin prep'd. by copolyng. 1-20 wt.% of the total monomers of CH ₂ :CR ₁ [CONHCR ₂ R ₃ (CH ₂) _n SO ₃ H] (R ₁ = H, Me; R ₂ -3 = H, C ₁ to req. 10 alkyl; n = 1-10) with .gtoreq. 1 vinyl monomer(s) selected from styrene, (meth)acrylate esters, and 0.1-10 parts/100 parts thermoplastic resin of a calixarene comp'd. The toners show good charging properties and provide high-quality images without fog in high-speed process. Thus, a styrene-acrylic resin, MA 100 (carbon black), Viscol 660P (polypropylene) I, and styrene-2-acrylamide-2-methylpropanesulfonic acid copolymer were kneaded, pulverized, and mixed with SiO ₂ to give a toner, which was mixed with a carrier to give a developer.				
ST	toner acrylamide copolymer electrophotog; sulfonic acid copolymer toner electrophotog; charge controlling agent toner electrophotog; calixarene toner electrophotog				
IT	Electrophotographic developers (toners, contg. charge-controlling resins and calixarene compds.)				

IT 109081-46-1 151599-80-3 151599-81-4 151599-82-5
RL: USES (Uses)
(charge-controlling agent, electrophotog. **photoreceptor**
using)
IT 51121-85-8 61910-75-6
RL: USES (Uses)
(charge-controlling resin, electrophotog. developer toner contg.)

=> d his

(FILE 'HOME' ENTERED AT 10:34:31 ON 23 JAN 2002)

L1 FILE 'CA' ENTERED AT 10:34:40 ON 23 JAN 2002
2 S PFEIFFER?/AU AND CALIXARENE

FILE 'STNGUIDE' ENTERED AT 10:35:40 ON 23 JAN 2002

L2 FILE 'REGISTRY' ENTERED AT 10:38:03 ON 23 JAN 2002
220 S CALIX AND ARENE

L3 FILE 'CAPLUS' ENTERED AT 10:38:37 ON 23 JAN 2002
97 S L2 AND PHOTO?
L4 2 S L3 AND (E BEAM OR ELECTRON BEAM)
L5 110 S L2 AND HYDROXY
L6 3 S L3 AND HYDROXY
L7 3 S L6 NOT L4
L8 92 S L3 NOT L7 NOT L4
L9 4 S L8 AND CHEM? (5A)AMPLI?
L10 88 S L8 NOT L9
L11 0 S L10 AND GLYCOLURIL
L12 3 S L10 AND CROSSLINK?
L13 85 S L10 NOT L12
L14 4 S L13 AND PHOTORESIST?
L15 81 S L13 NOT L14
L16 0 S L15 AND LITHOGRAPH?
L17 1 S L15 AND PHOTOCUR?
L18 3 S L6 NOT L17
L19 0 S L18 AND PHOTOACID
L20 0 S L18 AND ACID?
L21 0 S L18 AND RESIST
L22 0 S L16 NOT L17
L23 80 S L15 NOT L17
L24 3 S L23 AND PHOTOACID
L25 77 S L23 NOT L24
L26 5 S L25 AND RESIST?
L27 72 S L25 NOT L26
L28 0 S L27 AND LITHOGRAPH?
L29 15 S L27 AND ACID?

=> s l27 not l29

L30 57 L27 NOT L29

=> s l30 and glycoluril

355 GLYCOLURIL
L31 0 L30 AND GLYCOLURIL

=> d ti l30 1-5

L30 ANSWER 1 OF 57 CAPLUS COPYRIGHT 2002 ACS
TI preparation of a hydrogen-bonded noncovalent supramol. assembly of
zinc(II) porphyrin complex-substituted calixarene and benzoquinone as a
nonconjugated electron-transporting system

L30 ANSWER 2 OF 57 CAPLUS COPYRIGHT 2002 ACS
TI Chemical detection based on adsorption-induced and **photoinduced**
stresses in microelectromechanical systems devices

L30 ANSWER 3 OF 57 CAPLUS COPYRIGHT 2002 ACS
TI Synthesis of dithiane-based **photolabile** molecular systems

L30 ANSWER 4 OF 57 CAPLUS COPYRIGHT 2002 ACS
TI Investigation of the interaction of calixarene (host) and neutral benzotrifluoride (guest). Comparison of luminescence characteristics of calixarenes with results of model calculations relating to complex formation

L30 ANSWER 5 OF 57 CAPLUS COPYRIGHT 2002 ACS
TI The inclusion complexation of dye guest molecules with water-soluble calixarene

=> d ti l30 6-57

L30 ANSWER 6 OF 57 CAPLUS COPYRIGHT 2002 ACS
TI C60 Fullerene-based materials as singlet oxygen O2(1.DELTA.g) **photosensitizers**: a time-resolved near-IR luminescence and optoacoustic study

L30 ANSWER 7 OF 57 CAPLUS COPYRIGHT 2002 ACS
TI Second-order nonlinear optical properties of amorphous calix[4]arenes containing carbazole derivatives

L30 ANSWER 8 OF 57 CAPLUS COPYRIGHT 2002 ACS
TI Host-guest interaction of calixarene molecules with neutral benzotrifluorides Comparison of luminescence spectral data with results of model calculations relating to complex formation

L30 ANSWER 9 OF 57 CAPLUS COPYRIGHT 2002 ACS
TI Preparation of metal complex cations useful for asymmetric synthesis of metal complexes

L30 ANSWER 10 OF 57 CAPLUS COPYRIGHT 2002 ACS
TI Effect of addition of calix[n]arenes on **photooxygenation** of 4,5-diphenylimidazolones

L30 ANSWER 11 OF 57 CAPLUS COPYRIGHT 2002 ACS
TI The electrochemical behavior of (C70)2-p-tert-butylcalix[6]arene complex film

L30 ANSWER 12 OF 57 CAPLUS COPYRIGHT 2002 ACS
TI Lanthanide complexes with a p-tert-butylcalix[4]arene fitted with phosphinoyl pendant arms

L30 ANSWER 13 OF 57 CAPLUS COPYRIGHT 2002 ACS
TI Characterization of caged cholinergic ligands. Sulfonated calix[4]arene inclusion complexes. [Erratum to document cited in CA131:39849]

L30 ANSWER 14 OF 57 CAPLUS COPYRIGHT 2002 ACS
TI Characterization of caged cholinergic ligands. Sulfonated calix[4]arene inclusion complexes

L30 ANSWER 15 OF 57 CAPLUS COPYRIGHT 2002 ACS
TI Calixochromes. Syntheses, structure, and supramolecular effects of biphotochromic calix[4]arenes

L30 ANSWER 16 OF 57 CAPLUS COPYRIGHT 2002 ACS
TI A new calix[4]arene-based fluorescent sensor for sodium ion

L30 ANSWER 17 OF 57 CAPLUS COPYRIGHT 2002 ACS
TI Tungsten-Tungsten Multiple-Bond Functionalities Supported by a Polyoxo Surface Modeled by Calix[4]arene

L30 ANSWER 18 OF 57 CAPLUS COPYRIGHT 2002 ACS

TI Diffuse reflectance laser-flash **photolytic** study of aromatic ketones with calixarene solid matrixes

L30 ANSWER 19 OF 57 CAPLUS COPYRIGHT 2002 ACS

TI High yield preparation of a novel tetrakis[ruthenium tris(bipyridine)]calix[6]arene derivative with good diastereomeric purity

L30 ANSWER 20 OF 57 CAPLUS COPYRIGHT 2002 ACS

TI Laser **photolysis** of p-tert-butylcalix[4]arene in cyclohexane.

L30 ANSWER 21 OF 57 CAPLUS COPYRIGHT 2002 ACS

TI Multifunctional hyper-structured molecules

L30 ANSWER 22 OF 57 CAPLUS COPYRIGHT 2002 ACS

TI A **photodecomplexation** study of the NaPh₄B and NaI complexes of p-tert-butylcalix[4]arene tetraethyl ester and tetramethyl ketone

L30 ANSWER 23 OF 57 CAPLUS COPYRIGHT 2002 ACS

TI Inclusion complex of calix[8]arene-C60: **photophysical** properties and its behavior as singlet molecular oxygen sensitizer in the solid state

L30 ANSWER 24 OF 57 CAPLUS COPYRIGHT 2002 ACS

TI Ion transport across membranes prepared by gel crystallization

L30 ANSWER 25 OF 57 CAPLUS COPYRIGHT 2002 ACS

TI A New Calix[4]arene-Based Barium Precursor for BaO-TiO₂ Thin Film Deposition

L30 ANSWER 26 OF 57 CAPLUS COPYRIGHT 2002 ACS

TI Light-switched metal-tunneling across a .pi.-basic tube of 1,3-alternate-calix[4]arenes

L30 ANSWER 27 OF 57 CAPLUS COPYRIGHT 2002 ACS

TI Synthesis and complexation properties towards alkali cations of a **photosensitive** azo-modified calix[4]crown ether in the 1,3-alternate conformation

L30 ANSWER 28 OF 57 CAPLUS COPYRIGHT 2002 ACS

TI Synthesis, characterization and UV-Vis properties of azocalix[4]crowns

L30 ANSWER 29 OF 57 CAPLUS COPYRIGHT 2002 ACS

TI Fluorescence and **photodimerization** of a calix[4]arene-based 2-naphthoate

L30 ANSWER 30 OF 57 CAPLUS COPYRIGHT 2002 ACS

TI Molecular architecture of calixarenes and their self-assembled mono- and multi-layers for nonlinear optical (NLO) applications

L30 ANSWER 31 OF 57 CAPLUS COPYRIGHT 2002 ACS

TI A novel host molecule p-[1-(4-hydroxyphenyl)-1-methylethyl]calix[8]arene. Synthesis and complexation properties in nonaqueous polar solution

L30 ANSWER 32 OF 57 CAPLUS COPYRIGHT 2002 ACS

TI **Photodegradation** of calixarenes

L30 ANSWER 33 OF 57 CAPLUS COPYRIGHT 2002 ACS

TI Solvent extraction of divalent palladium and platinum from aqueous solutions of their chloro complexes using an N,N-dimethyldithiocarbamoylethoxy substituted calix[4]arene

L30 ANSWER 34 OF 57 CAPLUS COPYRIGHT 2002 ACS

TI Synthesis and **Photophysical** Properties of a Novel Water-Soluble, Calixarene-Containing Polymer

L30 ANSWER 35 OF 57 CAPLUS COPYRIGHT 2002 ACS

TI Abnormal reaction of an aryl azide confined in a calix[6]arene skeleton

L30 ANSWER 36 OF 57 CAPLUS COPYRIGHT 2002 ACS
 TI **Photopolymerization** of methyl methacrylate initiated by benzoin derivatives

L30 ANSWER 37 OF 57 CAPLUS COPYRIGHT 2002 ACS
 TI Design, Synthesis, and Characterization of Three Kinds of .pi.-Cross-Conjugated Hexacarbenes with High-Spin (S = 6) Ground States

L30 ANSWER 38 OF 57 CAPLUS COPYRIGHT 2002 ACS
 TI Processing of silver halide **photographic** material and fixing solution for it

L30 ANSWER 39 OF 57 CAPLUS COPYRIGHT 2002 ACS
 TI Synthesis and luminescence of Eu³⁺ and Tb³⁺ complexes with novel calix[4]arene ligands carrying 2,2'-bipyridine subunits

L30 ANSWER 40 OF 57 CAPLUS COPYRIGHT 2002 ACS
 TI Molecular recognition of 2,6-naphthoquinone by 5,11,17,23,29,35-hexa-tert-butyl-37,38,39,40,41,42-hexahydroxycalix(6)arene

L30 ANSWER 41 OF 57 CAPLUS COPYRIGHT 2002 ACS
 TI Electric Field Effects of **Photogenerated** Ion Pairs on Nearby Molecules: A Model for the Carotenoid Band Shift in **Photosynthesis**

L30 ANSWER 42 OF 57 CAPLUS COPYRIGHT 2002 ACS
 TI Ion-selective electrode using **photosensitive** calixarene derivatives

L30 ANSWER 43 OF 57 CAPLUS COPYRIGHT 2002 ACS
 TI Light-responsive compositions containing calix[4]arene derivatives for optical recording media

L30 ANSWER 44 OF 57 CAPLUS COPYRIGHT 2002 ACS
 TI Tunable chemical sensors: light-switched ion selective electrodes on the basis of a **photoresponsive** calix[4]arene

L30 ANSWER 45 OF 57 CAPLUS COPYRIGHT 2002 ACS
 TI Method for processing silver halide **photographic** material

L30 ANSWER 46 OF 57 CAPLUS COPYRIGHT 2002 ACS
 TI Light-switched chromophoric device designed from an ionophoric calix[4]arene

L30 ANSWER 47 OF 57 CAPLUS COPYRIGHT 2002 ACS
 TI Complexes of lanthanoid salts with macrocyclic ligands. 41. **Photophysical** properties of lanthanide dinuclear complexes with p-tert-butylcalix[8]arene

L30 ANSWER 48 OF 57 CAPLUS COPYRIGHT 2002 ACS
 TI Developer solution for silver halide **photographic** material containing cyclic phenol oligomer and processing method

L30 ANSWER 49 OF 57 CAPLUS COPYRIGHT 2002 ACS
 TI Spot prevention in silver halide **photographic** material

L30 ANSWER 50 OF 57 CAPLUS COPYRIGHT 2002 ACS
 TI Light-responsive metal encapsulation in calix[4]arene

L30 ANSWER 51 OF 57 CAPLUS COPYRIGHT 2002 ACS
 TI Flow-injection analysis with tetrameric calixarene-based potentiometric detection

L30 ANSWER 52 OF 57 CAPLUS COPYRIGHT 2002 ACS
 TI Comparison of a calixarene-based ion-selective electrode with two automated analyzers for the clinical determination of sodium in blood plasma

L30 ANSWER 53 OF 57 CAPLUS COPYRIGHT 2002 ACS
 TI Encapsulation of lanthanide ions in calixarene receptors. A strongly luminescent terbium(3+) complex

L30 ANSWER 54 OF 57 CAPLUS COPYRIGHT 2002 ACS
 TI Silver halide color **photographic** material

L30 ANSWER 55 OF 57 CAPLUS COPYRIGHT 2002 ACS
 TI Calix[n]arenes - new light stabilizers for polyolefins

L30 ANSWER 56 OF 57 CAPLUS COPYRIGHT 2002 ACS
 TI Phenolic calixarenes as light stabilizers for polymers and low-molecular weight materials

L30 ANSWER 57 OF 57 CAPLUS COPYRIGHT 2002 ACS
 TI Preparation of 4-tert-butyloxocalix[n]arenes and their properties as UV-absorbers

=> d all 130 57,20

L30 ANSWER 57 OF 57 CAPLUS COPYRIGHT 2002 ACS
 AN 1985:505708 CAPLUS
 DN 103:105708
 TI Preparation of 4-tert-butyloxocalix[n]arenes and their properties as UV-absorbers

AU Ninagawa, Akira; Cho, Kazuhiro; Matsuda, Haruo
 CS Fac. Eng., Osaka Univ., Suita, 565, Japan
 SO Makromol. Chem. (1985), 186(7), 1379-85
 CODEN: MACEAK; ISSN: 0025-116X

DT Journal
 LA English
 CC 37-6 (Plastics Manufacture and Processing)
 Section cross-reference(s): 25

GI For diagram(s), see printed CA Issue.

AB The calixarenes I (x = 3, y = 1) (II) [98085-82-6], I (x = 5, y = 1) (III) [98085-83-7], and octa-tert-butyl-octahydroxy-trioxocalix[8]arene (IV) were prepd. from 4-tert-butylcalix[4]-, [6]- and [8]-arenes from 4-tert-butylphenol. 5,5'-Di-tert-butyl-2,2'-dihydroxybenzophenone (V) [25446-98-4] was prepd. via 5,5'-di-tert-butyl-2,2'-dimethoxybenzophenone (VI) [98085-85-9] from bis(5-tert-butyl-2-methoxyphenyl)methane [98085-84-8]. 1,4-Dioxane solns. of II, III, IV, V, and VI were irradiated. The **photostability** of III and IV in dioxane was better than that of II, V, or VI. A PVC [9002-86-2] film contg. 0.06 mmol III/g was most stable to **photooxidn.**

ST PVC light stabilizer calixarene; benzophenone dibutyldihydroxy light stabilizer

IT Light stabilizers
 (oxocalixarenes, prepn. and activity of)

IT 25446-98-4P **68971-82-4DP**, oxidized 98085-82-6P 98085-83-7P
 98085-85-9P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (light stabilizer, prepn. and properties of)

IT 9002-86-2
 RL: USES (Uses)
 (light stabilizers for, calixarenes as)

IT **60705-62-6 78092-53-2** 98085-84-8
 RL: RCT (Reactant)
 (oxidn. of)

L30 ANSWER 20 OF 57 CAPLUS COPYRIGHT 2002 ACS
 AN 1998:779992 CAPLUS
 DN 130:117202
 TI Laser **photolysis** of p-tert-butylcalix[4]arene in cyclohexane

AU Yuan, Lihua; Yao, Side; Zhauang, Zhihao; Lin, Nianyun
 CS Department of Chemistry, Sichuan Union University, Chengdu, 610064, Peop. Rep. China

SO Huaxue Yanjiu Yu Yingyong (1998), 10(3), 288-290
 CODEN: HYYIFM; ISSN: 1004-1656

PB Huaxue Yanjiu Yu Yingyong Bianjibu

DT Journal

LA Chinese

CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)

AB Laser flash **photolysis** study of p-tert-butylcalix[4]arene in
 cyclohexane by using a KrF laser radiation was carried out at room temp.
 Triplet state of the calix[4]arene was obsd. for the first time in
 absorption spectra. A mechanism of the formation of the triplet and the
 calixarene radical was proposed based on kinetic anal.

ST calixarene cyclohexane laser **photolysis** triplet state

IT Triplet state
 (in relation to laser **photolysis** of tert-butylcalix[4]arene
 in cyclohexane)

IT Flash **photolysis**
 (laser; laser **photolysis** of tert-butylcalix[4]arene in
 cyclohexane)

IT Metacyclophanes
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (radical; laser **photolysis** of tert-butylcalix[4]arene in
 cyclohexane)

IT Absorption spectra
 Kinetic analysis
 (used in studying laser **photolysis** of tert-butylcalix[4]arene
 in cyclohexane)

IT 60705-62-6, p-tert-Butylcalix[4]arene
 RL: PRP (Properties); RCT (Reactant)
 (laser **photolysis** of tert-butylcalix[4]arene in cyclohexane)

IT 110-82-7, Cyclohexane, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (laser **photolysis** of tert-butylcalix[4]arene in cyclohexane)

IT 592-57-4, 1,3-Cyclohexadiene 7782-44-7, Oxygen, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (quenching agent for studying laser **photolysis** of
 tert-butylcalix[4]arene in cyclohexane)

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L1 2 S PFEIFFER?/AU AND CALIXARENE

FILE 'STNGUIDE' ENTERED AT 10:35:40 ON 23 JAN 2002

FILE 'REGISTRY' ENTERED AT 10:38:03 ON 23 JAN 2002

L2 220 S CALIX AND ARENE

FILE 'CAPLUS' ENTERED AT 10:38:37 ON 23 JAN 2002

L3 97 S L2 AND PHOTO?

L4 2 S L3 AND (E BEAM OR ELECTRON BEAM)

L5 110 S L2 AND HYDROXY

L6 3 S L3 AND HYDROXY

L7 3 S L6 NOT L4

L8 92 S L3 NOT L7 NOT L4

L9 4 S L8 AND CHEM? (5A)AMPLI?

L10 88 S L8 NOT L9

L11 0 S L10 AND GLYCOLURIL

L12 3 S L10 AND CROSSLINK?
 L13 85 S L10 NOT L12
 L14 4 S L13 AND PHOTORESIST?
 L15 81 S L13 NOT L14
 L16 0 S L15 AND LITHOGRAPH?
 L17 1 S L15 AND PHOTOCUR?
 L18 3 S L6 NOT L17
 L19 0 S L18 AND PHOTOACID
 L20 0 S L18 AND ACID?
 L21 0 S L18 AND RESIST
 L22 0 S L16 NOT L17
 L23 80 S L15 NOT L17
 L24 3 S L23 AND PHOTOACID
 L25 77 S L23 NOT L24
 L26 5 S L25 AND RESIST?
 L27 72 S L25 NOT L26
 L28 0 S L27 AND LITHOGRAPH?
 L29 15 S L27 AND ACID?
 L30 57 S L27 NOT L29
 L31 0 S L30 AND GLYCOURIL

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CA SUBSCRIBER PRICE	-26.02	-27.20

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FILE COVERS 1971 TO PATENT PUBLICATION DATE: 22 Jan 2002 (20020122/PD)

FILE LAST UPDATED: 22 Jan 2002 (20020122/ED)

HIGHEST GRANTED PATENT NUMBER: US8336078

HIGHEST APPLICATION PUBLICATION NUMBER: US2001047529

CA INDEXING IS CURRENT THROUGH 22 Jan 2002 (20020122/UPCA)

ISSUE CLASS FIELDS (/INCL) CURRENT THROUGH: 22 Jan 2002 (20020122/PD)

REVISED CLASS FIELDS (/NCL) LAST RELOADED: Dec 2001

USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Dec 2001

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=> s l2 and photo?

96 L2

=> d pn,ab 1-18

L32 ANSWER 1 OF 18 USPATFULL

PI US 6337944 B1 20020108

AB The invention relates to a polymeric waveguide comprising a lanthanide ion-sensitizer complex, characterized in that the lanthanide ion is preferably neodymium(III) ion (Nd.sup.3+), ytterbium(III) ion (Yb.sup.3+), or erbium(III) ion (Er.sup.3+), and the sensitizer absorbs in the 400-1200 nm region, and preferably in the 600-1000 nm region. The invention also relates to an optical device comprising the same.

L32 ANSWER 2 OF 18 USPATFULL

PI US 6296831 B1 20011002

AB The present invention is a thermally reversible stimulus-sensitive gel or gelling copolymer radioisotope carrier that is a linear random copolymer of an [meth]acrylamide derivative and a hydrophilic comonomer, wherein the linear random copolymer is in the form of a plurality of linear chains having a plurality of molecular weights greater than or equal to a minimum gelling molecular weight cutoff. Addition of a biodegradable backbone and/or a therapeutic agent imparts further utility. The method of the present invention for making a thermally reversible stimulus-sensitive gelling copolymer radionuclide carrier has the steps of: (a) mixing a stimulus-sensitive reversible gelling copolymer with an aqueous solvent as a stimulus-sensitive reversible gelling solution; and (b) mixing a radioisotope with said stimulus-sensitive reversible gelling solution as said radioisotope carrier. The gel is enhanced by either combining it with a biodegradable backbone and/or a therapeutic agent in a gelling solution made by mixing the copolymer with an aqueous solvent.

L32 ANSWER 3 OF 18 USPATFULL

PI US 2001024636 A1 20010927

AB The present invention is a thermally reversible stimulus-sensitive gel or gelling copolymer radioisotope carrier that is a linear random copolymer of an [meth]-acrylamide derivative and a hydrophilic comonomer, wherein the linear random copolymer is in the form of a plurality of linear chains having a plurality of molecular weights greater than or equal to a minimum gelling molecular weight cutoff. Addition of a biodegradable backbone and/or a therapeutic agent imparts further utility. The method of the present invention for making a thermally reversible stimulus-sensitive gelling copolymer radionuclide carrier has the steps of: (a) mixing a stimulus-sensitive reversible gelling copolymer with an aqueous solvent as a stimulus-sensitive reversible gelling solution; and (b) mixing a radioisotope with said stimulus-sensitive reversible gelling solution as said radioisotope carrier. The gel is enhanced by either combining it with a biodegradable backbone and/or a therapeutic agent in a gelling solution made by mixing the copolymer with an aqueous solvent.

L32 ANSWER 4 OF 18 USPATFULL

PI US 6280908 B1 20010828

AB A method of improving the etch resistance of a patterned imageable resist prior to patterning an underlying substrate layer is provided. Specifically, the method employed by the present invention comprises applying a layer of an imageable resist to a substrate layer; patterning the layer of imageable resist by removing selective areas thereof; and treating the patterned imageable resist with an atmosphere comprising molecules of a hardening agent so as to obtain a hardened resist surface which etches at a slower rate than that of the untreated resist.

L32 ANSWER 5 OF 18 USPATFULL

PI US 2001003231 A1 20010614

AB A fuel composition having reduced tendency to discoloration at high temperatures comprises kerosine and/or is a jet fuel, and also comprises

a cyclic compound comprising m units of the formula 1a. ##STR1##

and n units of the formula (Ib) ##STR2##

joined together to form a ring, wherein Y is a divalent bridging group which may be the same or different in each unit; R^{sup.0} is H or (C_{sub.1}-C_{sub.6}) alkyl; R^{sup.5} is H or (C_{sub.1}-C_{sub.60}) alkyl; and j is 1 or 2; R^{sup.3} is hydrogen, a hydrocarbyl or a hetero-substituted hydrocarbyl group; each of R^{sup.1}, R^{sup.2} and R^{sup.4}, which may be the same or different, is hydroxyl, hydrogen, hydrocarbyl or hetero-substituted hydrocarbyl, with the proviso that at least one of R^{sup.1}, R^{sup.2}, R^{sup.4} is hydroxyl, and m+n is 4 to 20, m is 1-8 and n is at least 3 and preferably either R^{sup.1} is hydroxyl and R^{sup.2} and R^{sup.4} are independently either hydrogen, hydrocarbyl or hetero-substituted hydrocarbyl, or R^{sup.2} and R^{sup.1} are hydroxyl and R^{sup.1} is either hydrogen, hydrocarbyl or hetero-substituted hydrocarbyl; and m+n is from 4 to 20, m is from 1 to 8 and n is at least 3.

L32 ANSWER 6 OF 18 USPATFULL

PI US 5952145 19990914

AB Charge control agent and toner for developing electrostatic images comprising such a charge control agent whose active ingredient is a calix (n) arene compound of formula I: ##STR1## wherein x+y=n; x and y each is an integer of 1 or more; n is an integer of 4-8; the x repeat units and y repeat units can be arranged in any order; R^{sup.1} and R^{sup.2} each is H, C_{sub.1-12} alkyl, C_{sub.2-12} alkenyl, C_{sub.7-12} aralkyl, phenyl, C_{sub.4-8} cycloalkyl, halogen, nitro, amino, alkyl- or phenyl-substituted amino, --Si(CH_{sub.3})_{sub.3}, or --SO_{sub.3} H; and of the n R radicals in the --OR groups, 1 to (n-1) are H, with the remaining (n-1) to 1 being alkyl, alkenyl, phenyl, aralkyl, cycloalkyl, --COR^{sup.3} [wherein R^{sup.3} is H, alkyl, alkenyl, phenyl, aralkyl, or cycloalkyl], --Si(CH_{sub.3})_{sub.3}, --(CH_{sub.2})_{sub.m} COOR^{sup.4} [wherein R^{sup.4} is H or lower alkyl and m is an integer of 1-3], --(CH_{sub.2} CH_{sub.2} O)_{sub.r} H [wherein r is an integer of 1-10], or ##STR2##

L32 ANSWER 7 OF 18 USPATFULL

PI US 5711927 19980127

AB This invention relates to a method of purifying fullerene by recrystallization of a fullerene-complexing agent complex and to a fullerene-complexing agent complex.

L32 ANSWER 8 OF 18 USPATFULL

PI US 5482520 19960109

AB The present invention provides a chemical composition comprising a t-butyl calix[8]arene encapsulated cyanuric acid derivatized with at least one C_{sub.4}-C_{sub.50} n-alkyl halide, n-alkaryl halide, aryl halide or polyoxyalkylene halide.

L32 ANSWER 9 OF 18 USPATFULL

PI US 5464587 19951107

AB A luminescence-optical indicator for determining the activity of alkali metals based on decay time includes at least three components that are chemically bound to one another, i.e., a fluorophor, a functional group with which the luminescence decay time of the fluorophor can be influenced, and a ionophor binding the alkali metal ions to be measured in a selective and reversible manner, the effect of the functional group on the decay time of the fluorophor being altered in dependence on the activity of the alkali metal ions.

L32 ANSWER 10 OF 18 USPATFULL

PI US 5434208 19950718

AB The invention relates to an optically non-linear active waveguiding material comprising an optically transparent polymer and a non-linear optical dopant comprising more than one donor- π -acceptor unit.

Dopants comprising more than one donor- π -acceptor unit, especially dopants in which the donor- π -acceptor units are positioned in a cyclic group, have a high hyperpolarizability and a charge-transfer absorption band wavelength which is about the same as that of dopants with only one donor- π -acceptor unit.

Especially suitable dopants for use are calix(4)arenes. These are provided with acceptor groups at the upper rim and with donor groups at the lower rim. In addition to having excellent hyperpolarizability, these compounds were found to be readily soluble in host polymers, such as polymethylene (meth) acrylate and polystyrene. Because of their charge-transfer absorption band at a low wavelength, optically non-linear active waveguiding structures containing such dopants are suitable for use as frequency doublers.

The invention further relates to hitherto undisclosed calix(4)arenes functionalized with nitrostilbene groups, cyanostilbene groups, sulfor stilbene groups, sulfonate stilbene groups, azobenzenes or benzylidene aniline compounds.

L32 ANSWER 11 OF 18 USPATFULL

PI US 5350657 19940927

AB In toner for developing an electrostatic latent image, at least an organic charge-controlling agent having a BET specific surface area of 15 to 80 m²/g and inorganic fine particles having a BET specific surface area of 10 to 150 m²/g are fixed and/or film-formed on the surface of core particles mainly composed of thermoplastic resin.

L32 ANSWER 12 OF 18 USPATFULL

PI US 5294528 19940315

AB There is disclosed a silver halide color **photographic** material having at least one silver halide emulsion layer, wherein the silver halide emulsion layer comprises a magenta coupler and a compound that can break the aggregation of azomethine dye formed from said magenta coupler and the oxidized product of the color-developing agent. The silver halide color **photographic** material exhibits an excellent effect that the light-fastness of image dye and the color reproduction are good.

L32 ANSWER 13 OF 18 USPATFULL

PI US 5210216 19930511

AB Calixarene and oxacalixarene derivatives of the formula IV: ##STR1## wherein $m'+m''=0-8$

$n=0-8$

$m'.gtoreq.1/2(m'+m'')$

$3.ltoreq.m'+m''+n.ltoreq.8$

if $n=0$, $m'+m''.gtoreq.4$

R³ is H, halogen, or hydrocarbyl, aryl, hydrocarbylaryl or a substituted derivative thereof and R³ may be the same or different on each aryl group;

R¹⁵ is H or hydrocarbyl, aryl, hydrocarbylaryl or a substituted derivative thereof;

X is selected from ##STR2## wherein R⁷ and R⁸ which may be the same or different are H or hydrocarbyl (including a cycloaliphatic ring formed by R⁷ and R⁸ together), aryl, hydrocarbylaryl or a substituted derivative thereof; R⁹ is --OH, --NH₂, --NHC(O)NH₂ or --NHAr, wherein Ar is aryl or a substituted derivative thereof,

n' is 0 or 1.

Use of the compounds for sequestration of metals is also described.

L32 ANSWER 14 OF 18 USPATFULL

PI US 5206437 19930427

AB The present invention relates to novel calixarene derivatives having an inclusion activity which are useful for selective transportation of various metal ions, possess a biological activity and a redox activity, and are not only capable of forming conductive or **photoconductive** electron transfer complexes but also have strong ability of forming complexes and absorbing UV rays. The present invention also relates to intermediates of calixarene derivatives as well as processes for production thereof.

L32 ANSWER 15 OF 18 USPATFULL

PI US 5143784 19920901

AB A novel calixarene derivative, viz. acetylated methyl-calix[n]arene (n is from 4 to 8), exhibits high solubilities in various organic solvents. A film of this compound can easily be formed by a conventional solution coating method such as spin coating, and the obtained film is hard and heat-resistant. A pattern of negative type can be formed in the obtained film by selectively irradiating the film with a high-energy ray such as ion beam, electron beam or X-ray to polymerize and insolubilize the irradiated regions and then removing the unirradiated region by dissolution in an organic solvent.

L32 ANSWER 16 OF 18 USPATFULL

PI US 4912183 19900327

AB A free radical polymerization process comprises bringing together

(a) a monomeric material such as an acrylic monomer in a relatively low polarity medium

(b) a free radical source or initiator such as a metallic salt initiator or activator normally soluble only in high polarity media such as water and

(c) a calixarene derivative of the formula I: ##STR1## wherein $m+n=4, 6$ or 8 n =an integer greater than or equal to $1/2 (m+n)$

wherein $m+n=4, 6$ or 8

n =an integer greater than or equal to $1/2 (m+n)$

R=hydrocarbyl, hydrocarbyloxy, substituted hydrocarbyl, substituted hydrocarbyloxy, aryl, hydrocarbylaryl, aryloxy, hydrocarbylaryloxy, substituted aryl, substituted hydrocarbylaryl, substituted aryloxy, or substituted hydrocarbylaryloxy;

R'=H, hydrocarbyl, aryl, hydrocarbylaryl, substituted hydrocarbyl, substituted aryl, or substituted hydrocarbylaryl;

R''=H, hydrocarbyl or substituted hydrocarbyl.

A free radical polymerization catalyst comprises a combination of a water-soluble, organic-insoluble initiator and a calixarene derivative of formula I.

A gap-filling adhesive composition is also described which comprises an acrylic monomeric material adapted for activation by a metal salt activator such as a copper salt, wherein the composition includes a calixarene derivative of formula I. In the gap-filling adhesive composition the calixarene derivative may be used jointly with a halogenated alkyl acrylate or methacrylate which is halogenated on the alkyl portion.

L32 ANSWER 17 OF 18 USPATFULL

PI US 4699966 19871013
AB A linear or cross-linked polymer selected from polythioethers, polyethers, styrenic polymers, polyacrylates, and polyorganosiloxanes having a plurality of calixarene groups bound thereon, the calixarene groups having the formula ##STR1## where the R.sup.1 groups are the same or different H or hydrocarbyl groups; the R.sup.2 groups are H, hydrocarbyl, --CH.sub.2 C(=O)OR.sup.3, --CH.sub.2 C(=O)R.sup.3, or --C(=O)NHR.sup.3, R.sup.3 is hydrocarbyl or substituted hydrocarbyl; n is an integer of 1-8, m is an integer of 0-7 and n+m is 4-8.

L32 ANSWER 18 OF 18 USPATFULL

PI US 4642362 19870210

AB A linear or cross-linked polymer selected from polythioethers, polyethers, styrenic polymers, polyacrylates, and polyorganosiloxanes having a plurality of calixarene groups bound thereon, the calixarene groups having the formula ##STR1## where the R.sup.1 groups are the same or different H or hydrocarbyl groups; the R.sup.2 groups are H, hydrocarbyl, --CH.sub.2 C(.dbd.O)OR.sup.3, --CH.sub.2 C(.dbd.O)R.sup.3, or --C(.dbd.O)NHR.sup.3, R.sup.3 is hydrocarbyl or substituted hydrocarbyl; n is an integer of 1-8, m is an integer of 0-7 and n+m is 4-8.

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FILE 'CA' ENTERED AT 10:34:40 ON 23 JAN 2002
L1 2 S PFEIFFER?/AU AND CALIXARENE

FILE 'STNGUIDE' ENTERED AT 10:35:40 ON 23 JAN 2002

FILE 'REGISTRY' ENTERED AT 10:38:03 ON 23 JAN 2002
L2 220 S CALIX AND ARENE

FILE 'CAPLUS' ENTERED AT 10:38:37 ON 23 JAN 2002

L3 97 S L2 AND PHOTO?
L4 2 S L3 AND (E BEAM OR ELECTRON BEAM)
L5 110 S L2 AND HYDROXY
L6 3 S L3 AND HYDROXY
L7 3 S L6 NOT L4
L8 92 S L3 NOT L7 NOT L4
L9 4 S L8 AND CHEM? (5A)AMPLI?
L10 88 S L8 NOT L9
L11 0 S L10 AND GLYCOLURIL
L12 3 S L10 AND CROSSLINK?
L13 85 S L10 NOT L12
L14 4 S L13 AND PHOTORESIST?
L15 81 S L13 NOT L14
L16 0 S L15 AND LITHOGRAPH?
L17 1 S L15 AND PHOTOCUR?
L18 3 S L6 NOT L17
L19 0 S L18 AND PHOTOACID
L20 0 S L18 AND ACID?
L21 0 S L18 AND RESIST
L22 0 S L16 NOT L17
L23 80 S L15 NOT L17
L24 3 S L23 AND PHOTOACID
L25 77 S L23 NOT L24
L26 5 S L25 AND RESIST?
L27 72 S L25 NOT L26
L28 0 S L27 AND LITHOGRAPH?
L29 15 S L27 AND ACID?
L30 57 S L27 NOT L29
L31 0 S L30 AND GLYCOLURIL

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L32 18 S L2 AND PHOTO?

=> FIL STNGUIDE

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	36.58	221.94
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CA SUBSCRIBER PRICE	0.00	-27.20

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COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	0.00	221.94
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
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FILE 'HOME' ENTERED AT 10:55:11 ON 23 JAN 2002

=> log y

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	0.15	222.09
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	0.00	-27.20

STN INTERNATIONAL LOGOFF AT 10:56:02 ON 23 JAN 2002

Connection closed by remote host

Trying 3106016892...Open

Welcome to STN International! Enter x:x
LOGINID:sssptaul56cxh
PASSWORD:
TERMINAL (ENTER 1, 2, 3, OR ?):2

***** Welcome to STN International *****

NEWS	1		Web Page URLs for STN Seminar Schedule - N. America
NEWS	2	Sep 17	IMSworld Pharmaceutical Company Directory name change to PHARMASEARCH
NEWS	3	Oct 09	Korean abstracts now included in Derwent World Patents Index
NEWS	4	Oct 09	Number of Derwent World Patents Index updates increased
NEWS	5	Oct 15	Calculated properties now in the REGISTRY/ZREGISTRY File
NEWS	6	Oct 22	Over 1 million reactions added to CASREACT
NEWS	7	Oct 22	DGENE GETSIM has been improved
NEWS	8	Oct 29	AAASD no longer available
NEWS	9	Nov 19	New Search Capabilities USPATFULL and USPAT2
NEWS	10	Nov 19	TOXCENTER(SM) - new toxicology file now available on STN
NEWS	11	Nov 29	COPPERLIT now available on STN
NEWS	12	Nov 29	DWPI revisions to NTIS and US Provisional Numbers
NEWS	13	Nov 30	Files VETU and VETB to have open access
NEWS	14	Dec 10	WPINDEX/WPIDS/WPIX New and Revised Manual Codes for 2002
NEWS	15	Dec 10	DGENE BLAST Homology Search
NEWS	16	Dec 17	WELDASEARCH now available on STN
NEWS	17	Dec 17	STANDARDS now available on STN
NEWS	18	Dec 17	New fields for DPCI
NEWS	19	Dec 19	CAS Roles modified
NEWS	20	Dec 19	1907-1946 data and page images added to CA and CPlus
NEWS EXPRESS		August 15	CURRENT WINDOWS VERSION IS V6.0c, CURRENT MACINTOSH VERSION IS V6.0 (ENG) AND V6.0J (JP), AND CURRENT DISCOVER FILE IS DATED 07 AUGUST 2001
NEWS HOURS			STN Operating Hours Plus Help Desk Availability
NEWS INTER			General Internet Information
NEWS LOGIN			Welcome Banner and News Items
NEWS PHONE			Direct Dial and Telecommunication Network Access to STN
NEWS WWW			CAS World Wide Web Site (general information)

Enter NEWS followed by the item number or name to see news on that specific topic.

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***** STN Columbus *****

FILE 'HOME' ENTERED AT 12:53:31 ON 23 JAN 2002

=> file reg		
COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	0.15	0.15

FILE 'REGISTRY' ENTERED AT 12:53:36 ON 23 JAN 2002
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
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STRUCTURE FILE UPDATES: 20 JAN 2002 HIGHEST RN 385365-97-9
DICTIONARY FILE UPDATES: 22 JAN 2002 HIGHEST RN 385365-97-9

TSCA INFORMATION NOW CURRENT THROUGH July 7, 2001

Please note that search-term pricing does apply when
conducting SmartSELECT searches.

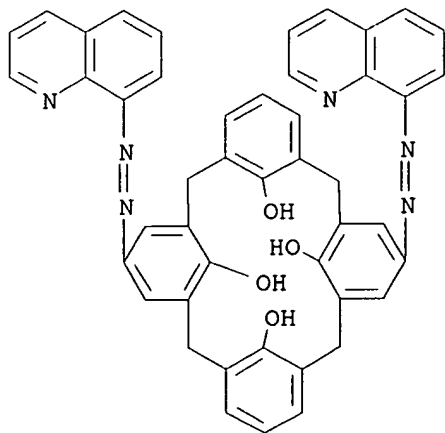
Crossover limits have been increased. See HELP CROSSOVER for details.

Calculated physical property data is now available. See HELP PROPERTIES
for more information. See STNote 27, Searching Properties in the CAS
Registry File, for complete details:
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

=> s calix and hydroxy
240 CALIX
2505693 HYDROXY
L1 69 CALIX AND HYDROXY

=> d scan

L1 69 ANSWERS REGISTRY COPYRIGHT 2002 ACS
IN Pentacyclo[19.3.1.13,7.19,13.115,19]octacosa-1(25),3,5,7(28),9,11,13(27),1
5,17,19(26),21,23-dodecaene-25,26,27,28-tetrol, 5,17-bis(8-quinolinylazo)-
(9CI)
MF C46 H34 N6 O4

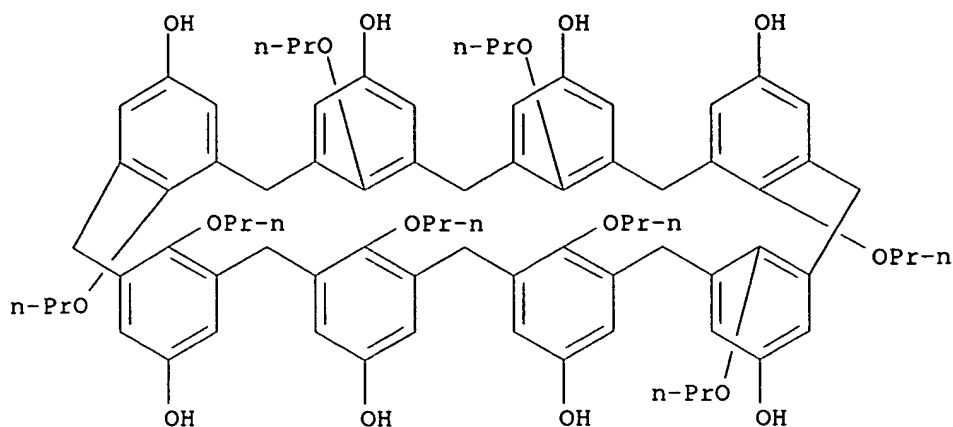


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

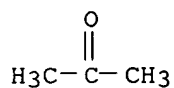
HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):5

L1 69 ANSWERS REGISTRY COPYRIGHT 2002 ACS
IN 2-Propanone, compd. with 49,50,51,52,53,54,55,56-
octapropoxynonacyclo[43.3.1.13,7.19,13.115,19.121,25.127,31.133,37.139,43]
hexapentaconta-1(49),3,5,7(56),9,11,13(55),15,17,19(54),21,23,25(53),27,29
,31(52),33,35,37(51),39,41,43(50),45,47-tetracosane-
5,11,17,23,29,35,41,47-octol (4:1) (9CI)
MF C80 H96 O16 . 4 C3 H6 O

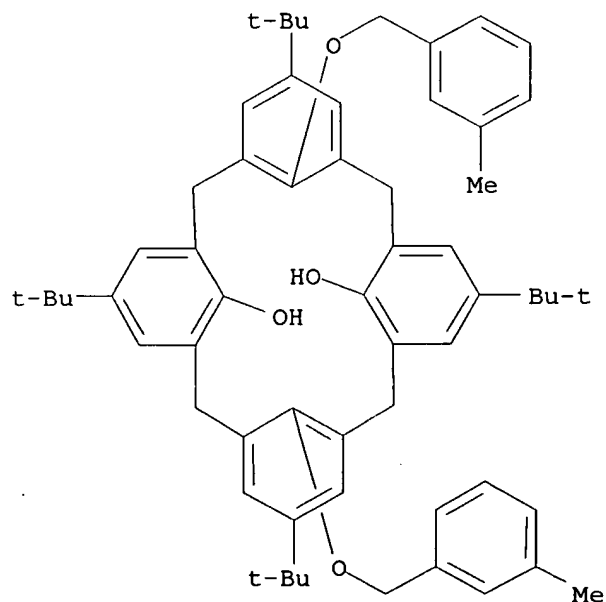
CM 1



CM 2

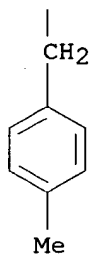
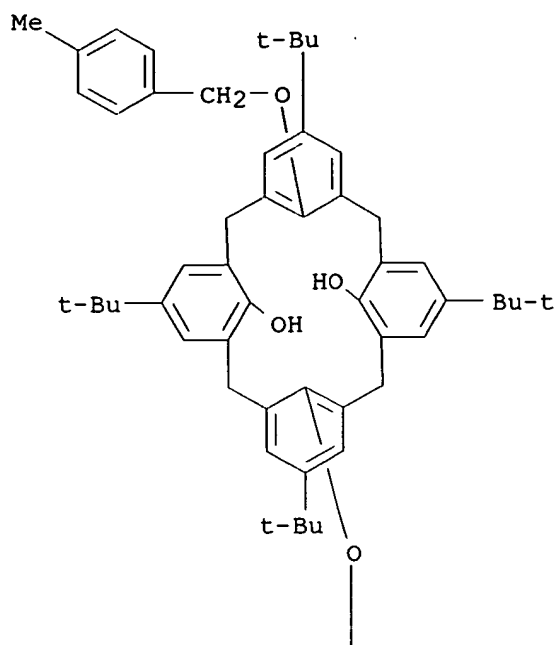


L1 69 ANSWERS REGISTRY COPYRIGHT 2002 ACS
 IN Pentacyclo[19.3.1.13,7.19,13.115,19]octacos-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-25,27-diol, 5,11,17,23-tetrakis(1,1-dimethylethyl)-26,28-bis[(3-methylphenyl)methoxy]-, stereoisomer (9CI)
 MF C60 H72 O4



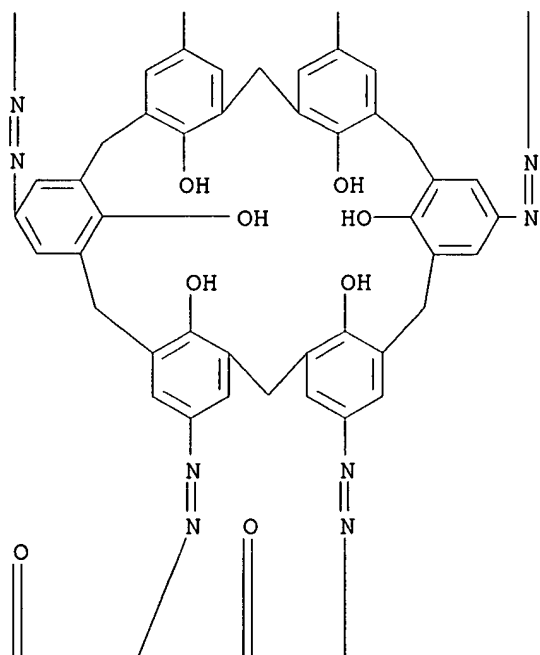
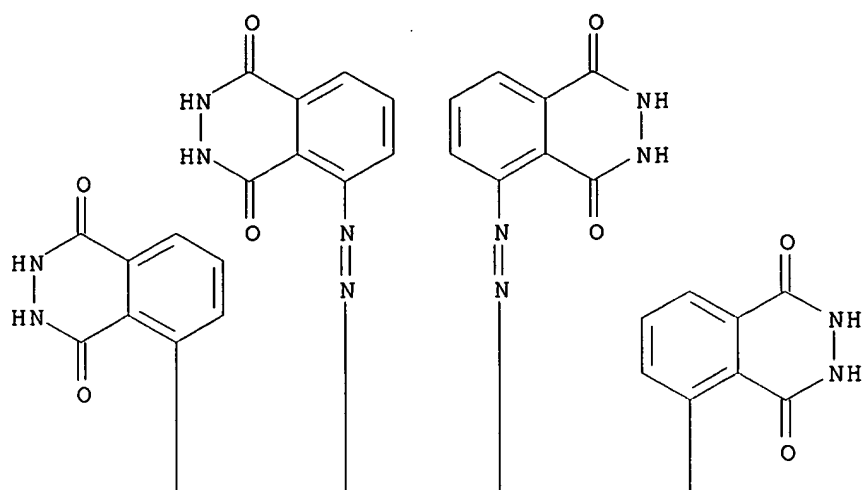
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

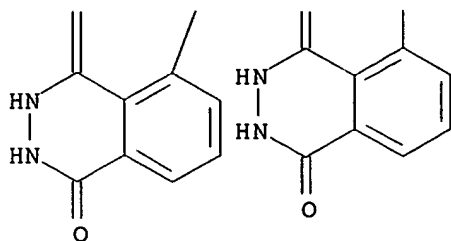
L1 69 ANSWERS REGISTRY COPYRIGHT 2002 ACS
 IN Pentacyclo[19.3.1.13,7.19,13.115,19]octacos-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-25,27-diol, 5,11,17,23-tetrakis(1,1-dimethylethyl)-26,28-bis[(4-methylphenyl)methoxy]- (9CI)



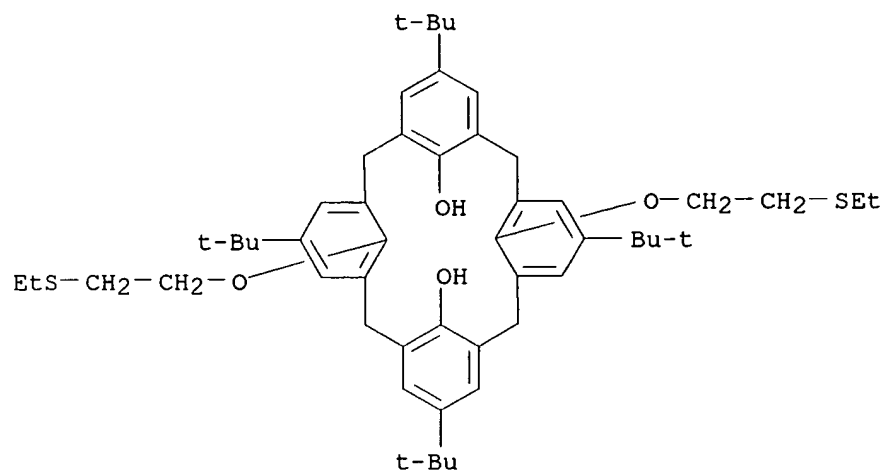
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L1 69 ANSWERS REGISTRY COPYRIGHT 2002 ACS
 IN 1,4-Phthalazinedione, 5,5',5'',5''',5''',5''''-[(37,38,39,40,41,42-
 hexahydroxyheptacyclo[31.3.1.13,7.19,13.115,19.121,25.127,31]dotetraconta-
 1(37),3,5,7(42),9,11,13(41),15,17,19(40),21,23,25(39),27,29,31(38),33,35-
 octadecaene-5,11,17,23,29,35-hexayl) hexakis(azo)]hexakis[2,3-dihydro-
 (9CI)
 MF C90 H60 N24 O18





L1 69 ANSWERS REGISTRY COPYRIGHT 2002 ACS
 IN Pentacyclo[19.3.1.13,7.19,13.115,19]octacosa-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-25,27-diol, 5,11,17,23-tetrakis(1,1-dimethylethyl)-26,28-bis[2-(ethylthio)ethoxy]- (9CI)
 MF C52 H72 O4 S2



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):end

=> d his

(FILE 'HOME' ENTERED AT 12:53:31 ON 23 JAN 2002)

FILE 'REGISTRY' ENTERED AT 12:53:36 ON 23 JAN 2002

L1 69 S CALIX AND HYDROXY

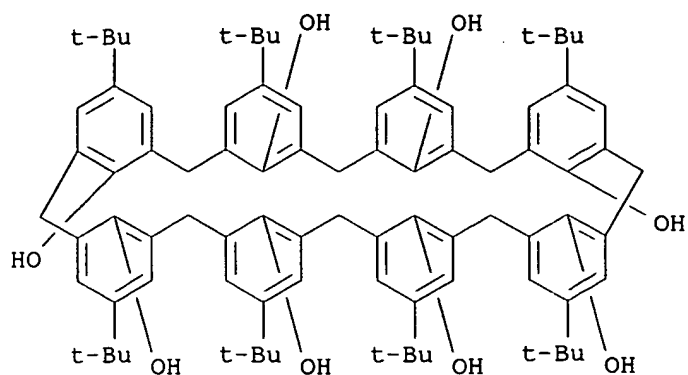
=> s 11 and 8

1812692 8

L2 13 L1 AND 8

=> d scan

L2 13 ANSWERS REGISTRY COPYRIGHT 2002 ACS
 IN Nonacyclo[43.3.1.13,7.19,13.115,19.121,25.127,31.133,37.139,43]hexapentacota-1(49),3,5,7(56),9,11,13(55),15,17,19(54),21,23,25(53),27,29,31(52),33,35,37(51),39,41,43(50),45,47-tetracosaene-49,50,51,52,53,54,55,56-octol, 5,11,17,23,29,35,41,47-octakis(1,1-dimethylethyl)- (9CI)
 MF C88 H112 O8
 CI COM



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

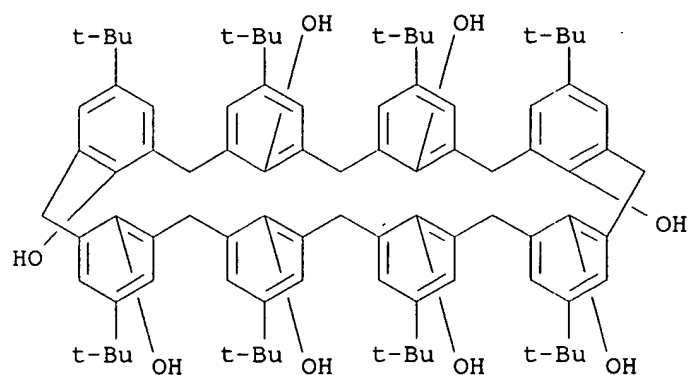
HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):3

L2 13 ANSWERS REGISTRY COPYRIGHT 2002 ACS

IN **Estr-4-en-3-one, 17-hydroxy-, (17.beta.)-, compd. with**
5,11,17,23,29,35,41,47-octakis(1,1-dimethylethyl)nonacyclo[43.3.1.13,7.19,
13.115,19.121,25.127,31.133,37.139,43]hexapentaconta-
1(49),3,5,7(56),9,11,13(55),15,17,19(54),21,23,25(53),27,29,31(52),33,35,3
7(51),39,41,43(50),45,47-tetracosaeene-49,50,51,52,53,54,55,56-octol (1:1)
(9CI)

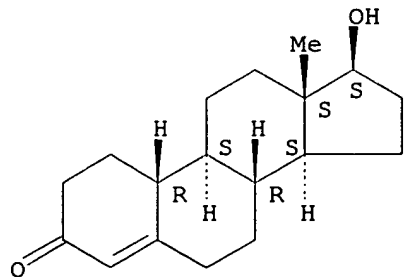
MF C88 H112 O8 . C18 H26 O2

CM 1



CM 2

Absolute stereochemistry.

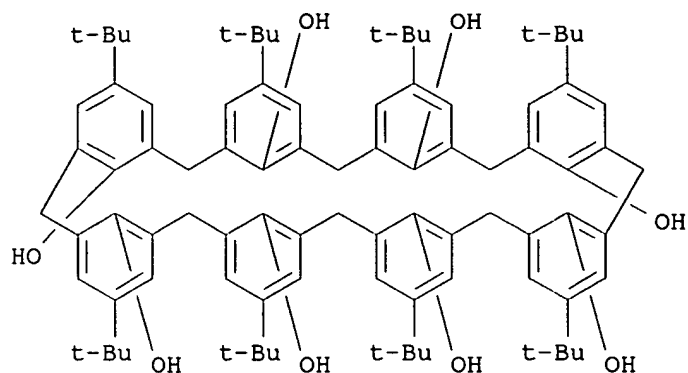


L2 13 ANSWERS REGISTRY COPYRIGHT 2002 ACS

IN **Pregn-4-ene-3,20-dione, 17-hydroxy-, compd. with**
5,11,17,23,29,35,41,47-octakis(1,1-dimethylethyl)nonacyclo[43.3.1.13,7.19,
13.115,19.121,25.127,31.133,37.139,43]hexapentaconta-
1(49),3,5,7(56),9,11,13(55),15,17,19(54),21,23,25(53),27,29,31(52),33,35,3
7(51),39,41,43(50),45,47-tetracosaene-49,50,51,52,53,54,55,56-octol (1:1)
(9CI)

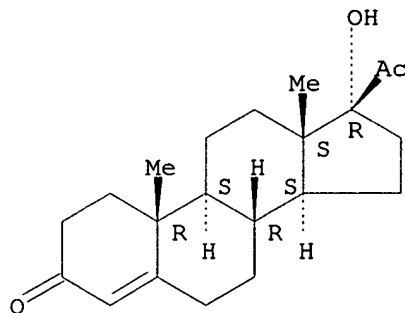
MF C88 H112 O8 . C21 H30 O3

CM 1



CM 2

Absolute stereochemistry.

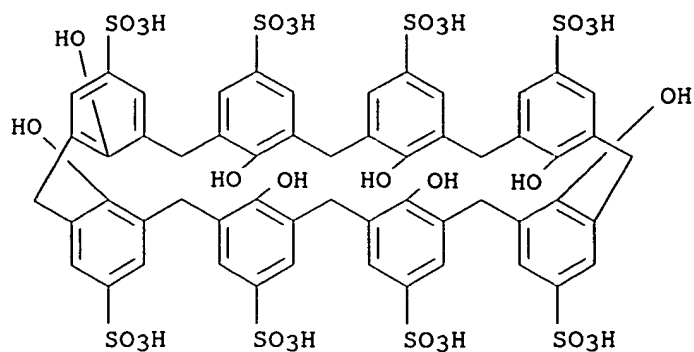


L2 13 ANSWERS REGISTRY COPYRIGHT 2002 ACS

IN **Nonacyclo[43.3.1.13,7.19,13.115,19.121,25.127,31.133,37.139,43]hexape**
ntaconta-1(49),3,5,7(56),9,11,13(55),15,17,19(54),21,23,25(53),27,29,31(52
),33,35,37(51),39,41,43(50),45,47-tetracosaene-5,11,17,23,29,35,41,47-
octasulfonic acid, 49,50,51,52,53,54,55,56-octahydroxy-, octasodium salt
(9CI)

MF C56 H48 O32 S8 . 8 Na

CI COM



● 8 Na

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):end

=> d his

(FILE 'HOME' ENTERED AT 12:53:31 ON 23 JAN 2002)

FILE 'REGISTRY' ENTERED AT 12:53:36 ON 23 JAN 2002

L1 69 S CALIX AND HYDROXY

L2 13 S L1 AND 8

=> d 1-13

L2 ANSWER 1 OF 13 REGISTRY COPYRIGHT 2002 ACS

RN 339984-41-7 REGISTRY

CN **Pentacyclo[19.3.1.13,7.19,13.115,19]octacosa-**
1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-25,26,27,28-
tetrol, 5,17-bis(8-quinolinylazo)- (9CI) (CA INDEX NAME)

OTHER NAMES:

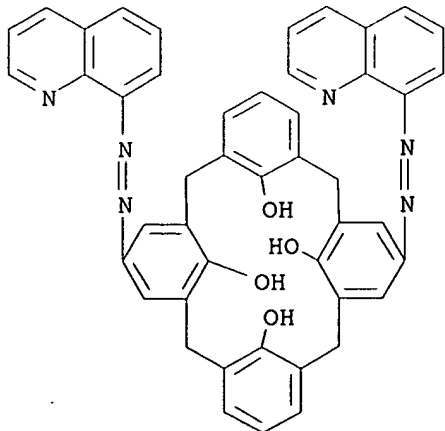
CN **5,17-Bis(quinolyl-8-azo)-25,26,27,28-tetrahydrocalix[4]arene**

FS 3D CONCORD

MF C46 H34 N6 O4

SR CA

LC STN Files: CA, CAPLUS



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

2 REFERENCES IN FILE CA (1967 TO DATE)

2 REFERENCES IN FILE CAPLUS (1967 TO DATE)

L2 ANSWER 2 OF 13 REGISTRY COPYRIGHT 2002 ACS
RN 331432-67-8 REGISTRY
CN 2-Propanone, compd. with 49,50,51,52,53,54,55,56-
octapropoxynonacyclo[43.3.1.13,7.19,13.115,19.121,25.127,31.133,37.139,43]
hexapentaconta-1(49),3,5,7(56),9,11,13(55),15,17,19(54),21,23,25(53),27,29
,31(52),33,35,37(51),39,41,43(50),45,47-tetracosaene-
5,11,17,23,29,35,41,47-octol (4:1) (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Nonacyclo[43.3.1.13,7.19,13.115,19.121,25.127,31.133,37.139,43]hexapentaco
nta-1(49),3,5,7(56),9,11,13(55),15,17,19(54),21,23,25(53),27,29,31(52),33,
35,37(51),39,41,43(50),45,47-tetracosaene-5,11,17,23,29,35,41,47-octol,
49,50,51,52,53,54,55,56-octapropoxy-, compd. with 2-propanone (1:4) (9CI)

OTHER NAMES:

CN Octa(p-hydroxy) octakis(propyloxy)calix[8]arene compd. with acetone
(1:4)

MF C80 H96 O16 . 4 C3 H6 O

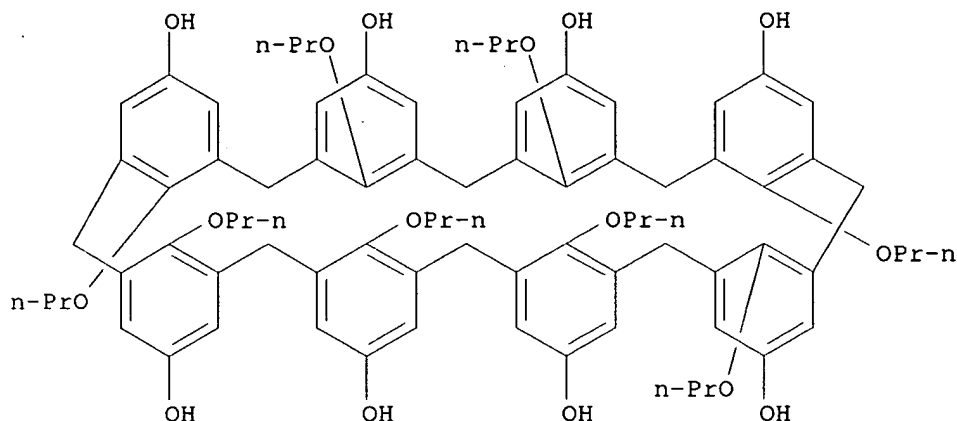
SR CA

LC STN Files: CA, CAPLUS

CM 1

CRN 261901-64-8

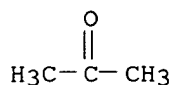
CMF C80 H96 O16



CM 2

CRN 67-64-1

CMF C3 H6 O



1 REFERENCES IN FILE CA (1967 TO DATE)

1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

L2 ANSWER 3 OF 13 REGISTRY COPYRIGHT 2002 ACS

RN 192517-26-3 REGISTRY

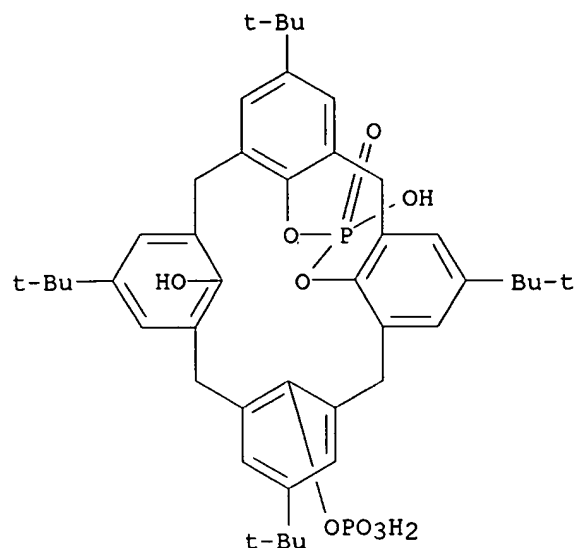
CN 11H,17H-1,21-Methano-6,10:12,16-dimetheno-5H-
dibenzo[d,s][1,3,2]dioxaphosphacycloeicosin-26,27-diol,
3,8,14,19-tetrakis(1,1-dimethylethyl)-23-hydroxy-, mono(dihydrogen
phosphate), 23-oxide (9CI) (CA INDEX NAME)

OTHER NAMES:

CN 5,11,17,23-Tetra-p-tert-butyl-25-hydroxy-28-dihydrogen
phosphate-.mu.-26,27-hydrogen phosphate calix[4]arene

MF C44 H56 O9 P2

SR CA
LC STN Files: CA, CAPLUS



2 REFERENCES IN FILE CA (1967 TO DATE)
2 REFERENCES IN FILE CAPLUS (1967 TO DATE)

L2 ANSWER 4 OF 13 REGISTRY COPYRIGHT 2002 ACS

RN 163313-24-4 REGISTRY

CN **Estr-4-en-3-one, 17-hydroxy-, (17.beta.)-, compd. with**
5,11,17,23,29,35,41,47-octakis(1,1-dimethylethyl)nonacyclo[43.3.1.13,7.19,
13.115,19.121,25.127,31.133,37.139,43]hexapentaconta-
1(49),3,5,7(56),9,11,13(55),15,17,19(54),21,23,25(53),27,29,31(52),33,35,3
7(51),39,41,43(50),45,47-tetracosaene-49,50,51,52,53,54,55,56-octol (1:1)
(9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN **Nonacyclo[43.3.1.13,7.19,13.115,19.121,25.127,31.133,37.139,43]hexape**
ntaconta-1(49),3,5,7(56),9,11,13(55),15,17,19(54),21,23,25(53),27,29,31(52
) ,33,35,37(51),39,41,43(50),45,47-tetracosaene-49,50,51,52,53,54,55,56-
octol, 5,11,17,23,29,35,41,47-octakis(1,1-dimethylethyl)-, compd. with
(17.beta.)-17-hydroxyestr-4-en-3-one (1:1) (9CI)

OTHER NAMES:

CN **19-Nortestosterone-p-tert-butylcalix[8]arene compd.**

FS STEREOSEARCH

MF C88 H112 O8 . C18 H26 O2

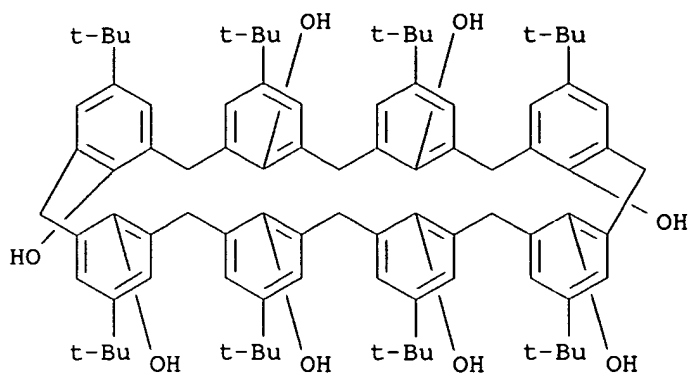
SR CA

LC STN Files: CA, CAPLUS

CM 1

CRN 68971-82-4

CMF C88 H112 O8

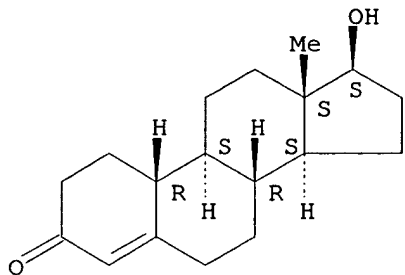


CM 2

CRN 434-22-0

CMF C18 H26 O2

Absolute stereochemistry.



1 REFERENCES IN FILE CA (1967 TO DATE)

1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

L2 ANSWER 5 OF 13 REGISTRY COPYRIGHT 2002 ACS

RN 163313-21-1 REGISTRY

CN **Pregn-4-ene-3,20-dione, 11,17,21-trihydroxy-, (11.beta.)-, compd. with 5,11,17,23,29,35,41,47-octakis(1,1-dimethylethyl)nonacyclo[43.3.1.13,7.19,13.115,19.121,25.127,31.133,37.139,43]hexapentaconta-1(49),3,5,7(56),9,11,13(55),15,17,19(54),21,23,25(53),27,29,31(52),33,35,37(51),39,41,43(50),45,47-tetracosaene-49,50,51,52,53,54,55,56-octol (1:1) (9CI) (CA INDEX NAME)**

OTHER CA INDEX NAMES:

CN **Nonacyclo[43.3.1.13,7.19,13.115,19.121,25.127,31.133,37.139,43]hexapentaconta-1(49),3,5,7(56),9,11,13(55),15,17,19(54),21,23,25(53),27,29,31(52),33,35,37(51),39,41,43(50),45,47-tetracosaene-49,50,51,52,53,54,55,56-octol, 5,11,17,23,29,35,41,47-octakis(1,1-dimethylethyl)-, compd. with (11.beta.)-11,17,21-trihydroxypregn-4-ene-3,20-dione (1:1) (9CI)**

OTHER NAMES:

CN **Hydrocortisone-p-tert-butylcalix[8]arene compd.**

FS STEREOSEARCH

MF C88 H112 O8 . C21 H30 O5

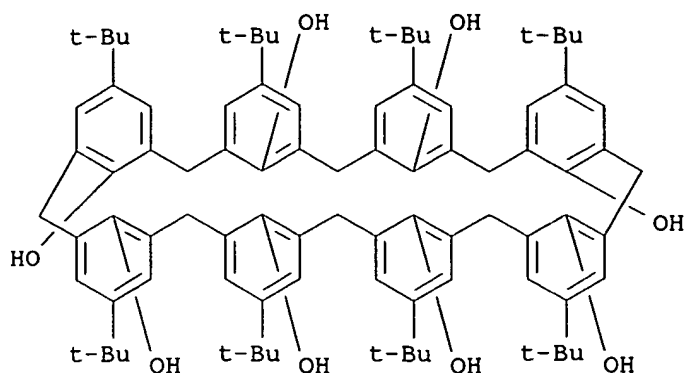
SR CA

LC STN Files: CA, CAPLUS

CM 1

CRN 68971-82-4

CMF C88 H112 O8

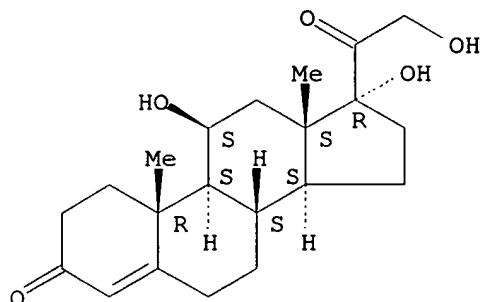


CM 2

CRN 50-23-7

CMF C21 H30 O5

Absolute stereochemistry.



1 REFERENCES IN FILE CA (1967 TO DATE)

1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

L2 ANSWER 6 OF 13 REGISTRY COPYRIGHT 2002 ACS

RN 163313-18-6 REGISTRY

CN **Pregn-4-ene-3,11,20-trione, 17,21-dihydroxy-, compd. with 5,11,17,23,29,35,41,47-octakis(1,1-dimethylethyl)nonacyclo[43.3.1.13,7.19,13.115,19.121,25.127,31.133,37.139,43]hexapentaconta-1(49),3,5,7(56),9,11,13(55),15,17,19(54),21,23,25(53),27,29,31(52),33,35,37(51),39,41,43(50),45,47-tetracosaene-49,50,51,52,53,54,55,56-octol (1:1) (9CI) (CA INDEX NAME)**

OTHER CA INDEX NAMES:

CN **Nonacyclo[43.3.1.13,7.19,13.115,19.121,25.127,31.133,37.139,43]hexapentaconta-1(49),3,5,7(56),9,11,13(55),15,17,19(54),21,23,25(53),27,29,31(52),33,35,37(51),39,41,43(50),45,47-tetracosaene-49,50,51,52,53,54,55,56-octol, 5,11,17,23,29,35,41,47-octakis(1,1-dimethylethyl)-, compd. with 17,21-dihydroxypregn-4-ene-3,11,20-trione (1:1) (9CI)**

OTHER NAMES:

CN **Cortisone-p-tert-butylcalix[8]arene compd.**

FS STEREOSEARCH

MF C88 H112 O8 . C21 H28 O5

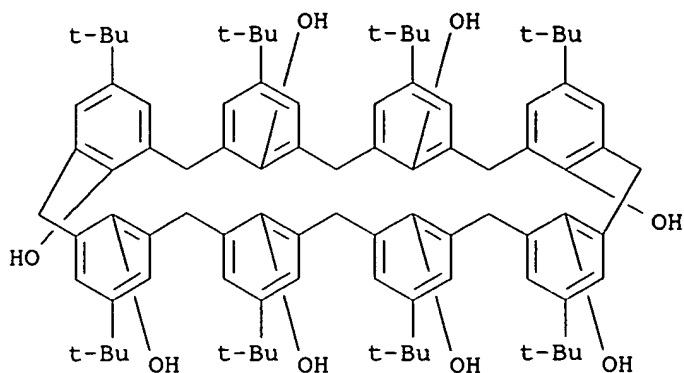
SR CA

LC STN Files: CA, CAPLUS

CM 1

CRN 68971-82-4

CMF C88 H112 O8

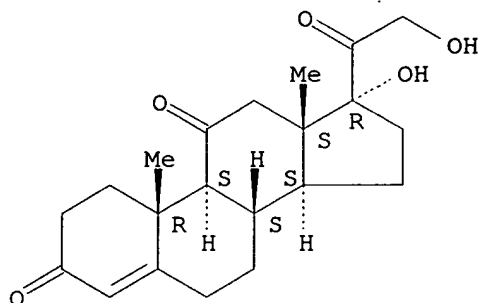


CM 2

CRN 53-06-5

CMF C21 H28 O5

Absolute stereochemistry.



1 REFERENCES IN FILE CA (1967 TO DATE)

1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

L2 ANSWER 7 OF 13 REGISTRY COPYRIGHT 2002 ACS

RN 163313-12-0 REGISTRY

CN **Pregn-4-ene-3,20-dione, 6-hydroxy-, (6.beta.)-, compd. with 5,11,17,23,29,35,41,47-octakis(1,1-dimethylethyl)nonacyclo[43.3.1.13,7.19,13.115,19.121,25.127,31.133,37.139,43]hexapentaconta-1(49),3,5,7(56),9,11,13(55),15,17,19(54),21,23,25(53),27,29,31(52),33,35,37(51),39,41,43(50),45,47-tetracosaene-49,50,51,52,53,54,55,56-octol (1:1) (9CI) (CA INDEX NAME)**

OTHER CA INDEX NAMES:

CN **Nonacyclo[43.3.1.13,7.19,13.115,19.121,25.127,31.133,37.139,43]hexapentaconta-1(49),3,5,7(56),9,11,13(55),15,17,19(54),21,23,25(53),27,29,31(52),33,35,37(51),39,41,43(50),45,47-tetracosaene-49,50,51,52,53,54,55,56-octol, 5,11,17,23,29,35,41,47-octakis(1,1-dimethylethyl)-, compd. with (6.beta.)-6-hydroxypregn-4-ene-3,20-dione (1:1) (9CI)**

OTHER NAMES:

CN **6.beta.-Hydroxyprogesterone-p-tert-butylcalix[8]arene compd.**

FS STEREOSEARCH

MF C88 H112 O8 . C21 H30 O3

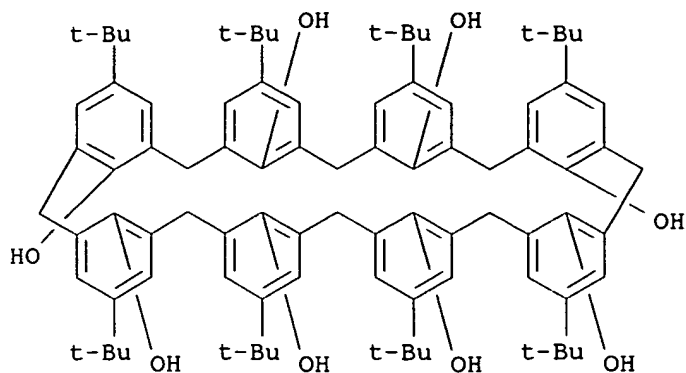
SR CA

LC STN Files: CA, CAPLUS

CM 1

CRN 68971-82-4

CMF C88 H112 O8

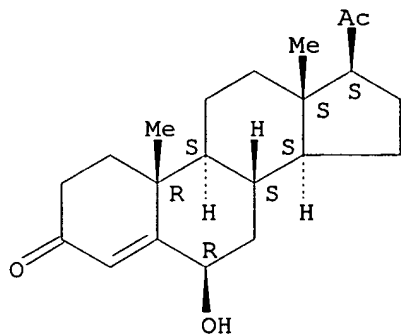


CM 2

CRN 604-19-3

CMF C21 H30 O3

Absolute stereochemistry.



1 REFERENCES IN FILE CA (1967 TO DATE)

1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

L2 ANSWER 8 OF 13 REGISTRY COPYRIGHT 2002 ACS

RN 163313-09-5 REGISTRY

CN **Pregn-4-ene-3,20-dione, 17-hydroxy-, compd. with**
5,11,17,23,29,35,41,47-octakis(1,1-dimethylethyl)nonacyclo[43.3.1.13,7.19,
13.115,19.121,25.127,31.133,37.139,43]hexapentaconta-
1(49),3,5,7(56),9,11,13(55),15,17,19(54),21,23,25(53),27,29,31(52),33,35,3
7(51),39,41,43(50),45,47-tetracosaene-49,50,51,52,53,54,55,56-octol (1:1)
(9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN **Nonacyclo[43.3.1.13,7.19,13.115,19.121,25.127,31.133,37.139,43]hexape**
ntaconta-1(49),3,5,7(56),9,11,13(55),15,17,19(54),21,23,25(53),27,29,31(52
) ,33,35,37(51),39,41,43(50),45,47-tetracosaene-49,50,51,52,53,54,55,56-
octol, 5,11,17,23,29,35,41,47-octakis(1,1-dimethylethyl)-, compd. with
17-hydroxypregn-4-ene-3,20-dione (1:1) (9CI)

OTHER NAMES:

CN **17.alpha.-Hydroxyprogesterone-p-tert-butylcalix[8]arene compd.**

FS STEREOSEARCH

MF C88 H112 O8 . C21 H30 O3

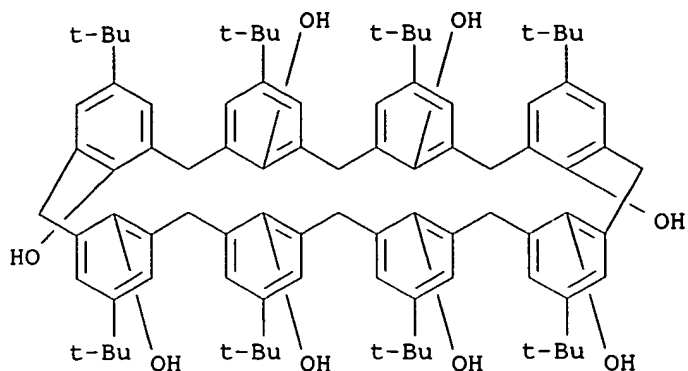
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LC STN Files: CA, CAPLUS

CM 1

CRN 68971-82-4

CMF C88 H112 O8

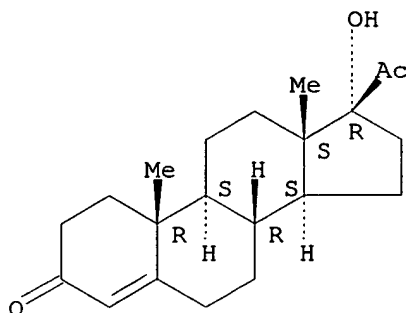


CM 2

CRN 68-96-2

CMF C21 H30 O3

Absolute stereochemistry.



1 REFERENCES IN FILE CA (1967 TO DATE)

1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

L2 ANSWER 9 OF 13 REGISTRY COPYRIGHT 2002 ACS

RN 163313-06-2 REGISTRY

CN **Pregn-4-ene-3,20-dione, 11-hydroxy-, (11.beta.)-, compd. with 5,11,17,23,29,35,41,47-octakis(1,1-dimethylethyl)nonacyclo[43.3.1.13,7.19,13.115,19.121,25.127,31.133,37.139,43]hexapentaconta-1(49),3,5,7(56),9,11,13(55),15,17,19(54),21,23,25(53),27,29,31(52),33,35,37(51),39,41,43(50),45,47-tetracosaene-49,50,51,52,53,54,55,56-octol (1:1) (9CI) (CA INDEX NAME)**

OTHER CA INDEX NAMES:

CN **Nonacyclo[43.3.1.13,7.19,13.115,19.121,25.127,31.133,37.139,43]hexapentaconta-1(49),3,5,7(56),9,11,13(55),15,17,19(54),21,23,25(53),27,29,31(52),33,35,37(51),39,41,43(50),45,47-tetracosaene-49,50,51,52,53,54,55,56-octol, 5,11,17,23,29,35,41,47-octakis(1,1-dimethylethyl)-, compd. with (11.beta.)-11-hydroxypregn-4-ene-3,20-dione (1:1) (9CI)**

OTHER NAMES:

CN **11.beta.-Hydroxypregesterone-p-tert-butylcalix[8]arene compd.**

FS STEREOSEARCH

MF C88 H112 O8 . C21 H30 O3

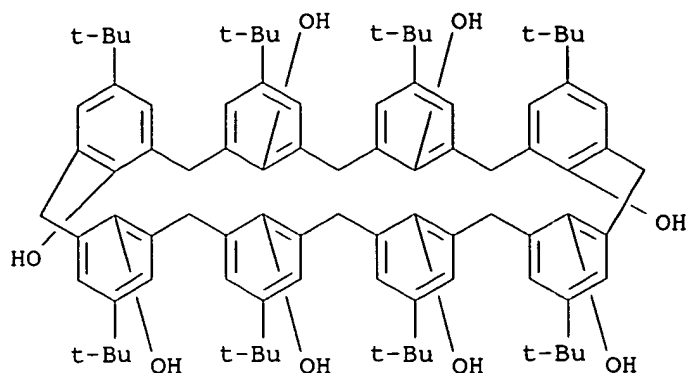
SR CA

LC STN Files: CA, CAPLUS

CM 1

CRN 68971-82-4

CMF C88 H112 O8

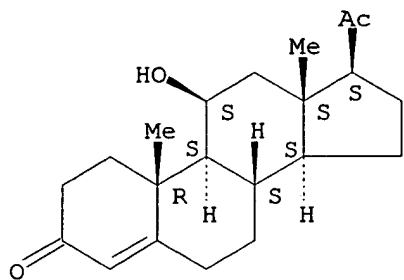


CM 2

CRN 600-57-7

CMF C21 H30 O3

Absolute stereochemistry.



1 REFERENCES IN FILE CA (1967 TO DATE)

1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

L2 ANSWER 10 OF 13 REGISTRY COPYRIGHT 2002 ACS

RN 163313-03-9 REGISTRY

CN **Pregn-4-ene-3,20-dione, 11-hydroxy-, (11.alpha.)-, compd. with 5,11,17,23,29,35,41,47-octakis(1,1-dimethylethyl)nonacyclo[43.3.1.13,7.19,13.115,19.121,25.127,31.133,37.139,43]hexapentaconta-1(49),3,5,7(56),9,11,13(55),15,17,19(54),21,23,25(53),27,29,31(52),33,35,37(51),39,41,43(50),45,47-tetracosaene-49,50,51,52,53,54,55,56-octol (1:1) (9CI) (CA INDEX NAME)**

OTHER CA INDEX NAMES:

CN **Nonacyclo[43.3.1.13,7.19,13.115,19.121,25.127,31.133,37.139,43]hexapentaconta-1(49),3,5,7(56),9,11,13(55),15,17,19(54),21,23,25(53),27,29,31(52),33,35,37(51),39,41,43(50),45,47-tetracosaene-49,50,51,52,53,54,55,56-octol, 5,11,17,23,29,35,41,47-octakis(1,1-dimethylethyl)-, compd. with (11.alpha.)-11-hydroxypregn-4-ene-3,20-dione (1:1) (9CI)**

OTHER NAMES:

CN **11.alpha.-Hydroxyprogesterone-p-tert-butylcalix[8]arene compd.**

FS STEREOSEARCH

MF C88 H112 O8 . C21 H30 O3

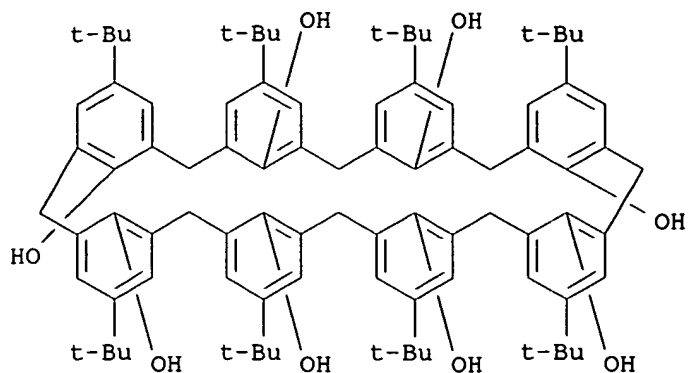
SR CA

LC STN Files: CA, CAPLUS

CM 1

CRN 68971-82-4

CMF C88 H112 O8

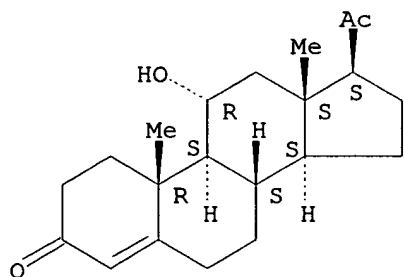


CM 2

CRN 80-75-1

CMF C21 H30 O3

Absolute stereochemistry.



1 REFERENCES IN FILE CA (1967 TO DATE)

1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

L2 ANSWER 11 OF 13 REGISTRY COPYRIGHT 2002 ACS

RN 163188-56-5 REGISTRY

CN **Nonacyclo[43.3.1.13,7.19,13.115,19.121,25.127,31.133,37.139,43]hexapentaconta-1(49),3,5,7(56),9,11,13(55),15,17,19(54),21,23,25(53),27,29,31(52),33,35,37(51),39,41,43(50),45,47-tetracosane-5,11,17,23,29,35,41,47-octasulfonic acid, 49,50,51,52,53,54,55,56-octahydroxy-, ion(8-) (9CI)**
(CA INDEX NAME)

OTHER NAMES:

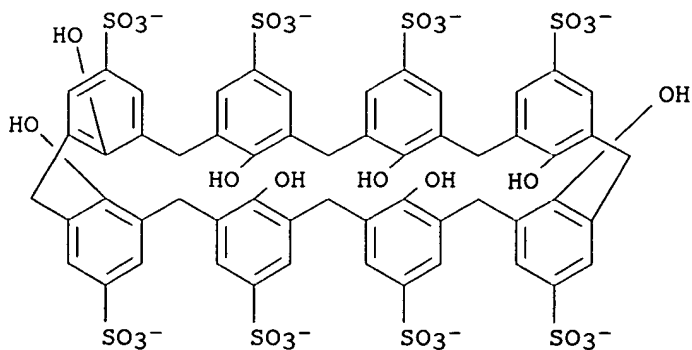
CN **Hydroxycalix[8]arene-p-sulfonate**

MF C56 H40 O32 S8

CI COM

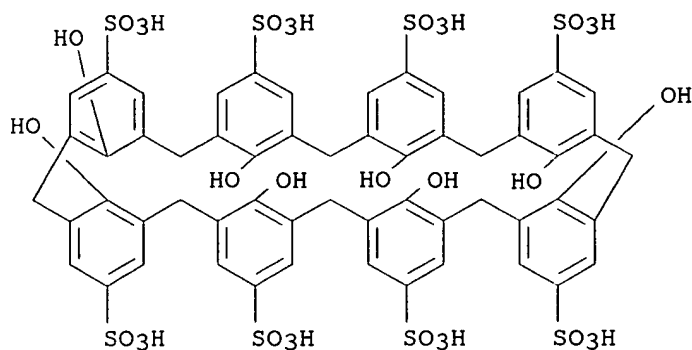
SR CA

LC STN Files: CA, CAPLUS



5 REFERENCES IN FILE CA (1967 TO DATE)
5 REFERENCES IN FILE CAPLUS (1967 TO DATE)

L2 ANSWER 12 OF 13 REGISTRY COPYRIGHT 2002 ACS
RN 105190-41-8 REGISTRY
CN **Nonacyclo[43.3.1.13,7.19,13.115,19.121,25.127,31.133,37.139,43]hexapentaconta-1(49),3,5,7(56),9,11,13(55),15,17,19(54),21,23,25(53),27,29,31(52),33,35,37(51),39,41,43(50),45,47-tetracosaene-5,11,17,23,29,35,41,47-octasulfonic acid, 49,50,51,52,53,54,55,56-octahydroxy-, octasodium salt (9CI) (CA INDEX NAME)**
OTHER NAMES:
CN **Octasodium hydroxycalix[8]arene-p-sulfonate**
DR 114272-63-8, 116664-74-5
MF C56 H48 O32 S8 . 8 Na
CI COM
SR CA
LC STN Files: BEILSTEIN*, CA, CAPLUS, CASREACT, TOXLIT, USPATFULL
(*File contains numerically searchable property data)
CRN (137407-62-6)

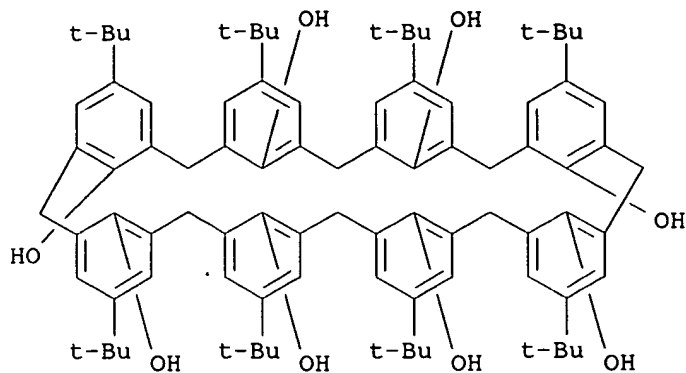


● 8 Na

24 REFERENCES IN FILE CA (1967 TO DATE)
2 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
24 REFERENCES IN FILE CAPLUS (1967 TO DATE)

L2 ANSWER 13 OF 13 REGISTRY COPYRIGHT 2002 ACS
RN 68971-82-4 REGISTRY
CN **Nonacyclo[43.3.1.13,7.19,13.115,19.121,25.127,31.133,37.139,43]hexapentacota-1(49),3,5,7(56),9,11,13(55),15,17,19(54),21,23,25(53),27,29,31(52),33,35,37(51),39,41,43(50),45,47-tetracosaene-49,50,51,52,53,54,55,56-octol, 5,11,17,23,29,35,41,47-octakis(1,1-dimethylethyl)- (9CI) (CA INDEX NAME)**
OTHER NAMES:
CN **4-(1,1-Dimethylethyl)calix[8]arene**
CN **4-tert-Butylcalix[8]arene**
CN **5,11,17,23,29,35,41,47-Octa-tert-butylcalix[8]arene-49,50,51,52,53,54,55,56-octol**
CN **p-tert-Butylcalix[8]arene**
CN **p-tert-Butylhydroxycalix[8]arene**
CN **tert-Butylcalix[8]arene**
DR 121612-88-2, 123369-48-2, 106750-70-3, 142639-45-0, 78092-52-1, 150335-48-1, 376396-34-8
MF C88 H112 O8
CI COM
LC STN Files: ANABSTR, BEILSTEIN*, BIOSIS, CA, CAPLUS, CASREACT, CHEMCATS, CHEMLIST, CSCHEM, GMELIN*, MSDS-OHS, TOXCENTER, TOXLIT, USPATFULL
(*File contains numerically searchable property data)
Other Sources: TSCA**

(**Enter CHEMLIST File for up-to-date regulatory information)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

270 REFERENCES IN FILE CA (1967 TO DATE)
33 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
271 REFERENCES IN FILE CAPLUS (1967 TO DATE)

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TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

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33.97

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(FILE 'HOME' ENTERED AT 12:53:31 ON 23 JAN 2002)

FILE 'REGISTRY' ENTERED AT 12:53:36 ON 23 JAN 2002

L1 69 S CALIX AND HYDROXY
L2 13 S L1 AND 8

FILE 'CAPLUS' ENTERED AT 12:56:07 ON 23 JAN 2002

=> s l2
L3 302 L2

=> s l3 and photo?
1101037 PHOTO?
L4 20 L3 AND PHOTO?

=> s l1
L5 1339 L1

=> d all l4 1-20

L4 ANSWER 1 OF 20 CAPLUS COPYRIGHT 2002 ACS
AN 2001:663120 CAPLUS
DN 136:6399
TI Synthesis and **photochemical** reaction of high performance UV
curing oligomers
AU Nishikubo, Tadatomi; Kameyama, Atsushi
CS Department of Applied Chemistry, Faculty of Engineering, Kanagawa
University, Kanagawa-ku, Yokohama, 221-8686, Japan
SO Polymer Preprints (American Chemical Society, Division of Polymer
Chemistry) (2001), 42(2), 722-723
CODEN: ACPPAY; ISSN: 0032-3934
PB American Chemical Society, Division of Polymer Chemistry
DT Journal; (computer optical disk)
LA English
CC 35-4 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 37
AB Calixarene derivs. contg. (meth)acrylate, vinyl ether, propargyl ether,
oxetane, oxirane, or spiro ortho ester groups were synthesized by reaction
of calixarenes with (meth)acrylic acid derivs., vinyl ether compds.,
propargyl bromide, oxetane derivs., epibromohydrin, and spiro ortho ester
derivs. The calixarene derivs. contg. **photoreactive** groups had
excellent thermal stability and high **photochem.** reactivity. The
calixarene derivs. are of interest for UV curing systems, e.g., inks,
coatings, solder masks, adhesives, and microelectronics uses.
ST calixarene acrylate prepn **photochem** reactivity UV curing; vinyl
oxetane oxirane calixarene prepn **photopolymn**; cationic
photopolymn reactivity spiro orthoester calixarene
IT Metacyclophanes
RL: CAT (Catalyst use); USES (Uses)
(meth(acrylate), vinyl ether, propargyl ether, oxetane, oxirane; prepn.
and **photochem.** reaction of calixarene oligomers contg.
meth(acrylate) and vinyl and oxetane substituents for UV-curable
formulations)
IT Crosslinking
(**photochem.**; prepn. and **photochem.** reaction of
calixarene oligomers contg. meth(acrylate) and vinyl and oxetane
substituents for UV-curable formulations)
IT Thermal stability
(prepn. and **photochem.** reaction of calixarene oligomers

contg. meth(acrylate) and vinyl and oxetane substituents for UV-curable formulations)

IT 221550-29-4P 245416-15-3P 245416-16-4P 245416-17-5P 245416-18-6P
 245416-19-7P 245416-20-0P 375387-44-3P
 RL: PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
 (monomer; prepn. and **photochem.** reaction of calixarene oligomers contg. meth(acrylate) and vinyl and oxetane substituents for UV-curable formulations)

IT 1643-19-2, Tetrabutylammonium bromide
 RL: CAT (Catalyst use); USES (Uses)
 (phase-transfer catalyst; prepn. and **photochem.** reaction of calixarene oligomers contg. meth(acrylate) and vinyl and oxetane substituents for UV-curable formulations)

IT 68015-88-3, 4-Morpholino-2,5-dibutoxybenzenediazonium hexafluorophosphate
 74227-35-3, Bis[4-(diphenylsulfonio)phenyl] sulfide
 bis(hexafluorophosphate)
 RL: CAT (Catalyst use); USES (Uses)
 (**photopolymn.** catalyst; prepn. and **photochem.** reaction of calixarene oligomers contg. meth(acrylate) and vinyl and oxetane substituents for UV-curable formulations)

IT 176256-16-9P 233775-58-1P 233775-59-2P 233775-60-5P 233775-63-8P
 243853-44-3P 343784-07-6P 343784-08-7P 375387-45-4P 375387-46-5P
 RL: PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
 (prepn. and **photochem.** reaction of calixarene oligomers contg. meth(acrylate) and vinyl and oxetane substituents for UV-curable formulations)

IT 106-91-2, Glycidyl methacrylate 106-95-6, Allyl bromide, reactions
 106-96-7, Propargyl bromide 110-75-8, 2-Chloroethyl vinyl ether
 814-68-6, Acryloyl chloride 920-46-7, Methacryloyl chloride 3132-64-7,
 Epibromohydrin 3678-15-7, Glycidyl vinyl ether 30674-80-7,
 (2-Methacryloxy)ethyl isocyanate 65338-98-9 **68971-82-4**
 78092-53-2, p-tert-Butylcalix[6]arene 79942-31-7, p-Methylcalix[6]arene
 99314-44-0, (3-Methyl-3-oxetanylmethoxy) tosylate
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (prepn. and **photochem.** reaction of calixarene oligomers contg. meth(acrylate) and vinyl and oxetane substituents for UV-curable formulations)

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD
 RE

- (1) Arimura, T; J Syn Org Chem Jpn 1989, V47, P523 CAPLUS
- (2) Fujita, J; Appl Phys Lett 1996, V68, P1297 CAPLUS
- (3) Gutsche, C; Calixarenes 1989
- (4) Holman, R; UV and EB Curing Formulation for Printing Inks, Coatings and Paints 1988
- (5) Iyo, M; J Polym Sci Part A Polym Chem 1999, V37, P3071 CAPLUS
- (6) Nishikubo, T; J Polym Sci Part A Polym Chem 1999, V37, P1805 CAPLUS
- (7) Nishikubo, T; J Polym Sci Part A Polym Chem in press
- (8) Nishikubo, T; Synthesis and Application of Photosensitive Polymers 1979
- (9) Tabata, Y; Technology & Application of UV/EB Curing 1997
- (10) Tabata, Y; Ultraviolet and Electron Beam Curable Materials 1989
- (11) Tsutui, K; Preprints of the 76th Annual Meeting of Chemical Society 1999, VII, P1319

L4 ANSWER 2 OF 20 CAPLUS COPYRIGHT 2002 ACS

AN 2001:466036 CAPLUS

DN 135:204581

TI Characterization of calixarenes by coupling of liquid chromatography with MALDI-TOF-MS

AU Kruger, Ralph-Peter; Falkenhagen, Jana; Schulz, Gunter; Gloede, Jorg

CS Bundesanstalt fur Materialforschung und -prufung (BAM), Unter den Eichen 87, Fachgruppe VI.3, Berlin, 12205, Germany

SO GIT Labor-Fachz. (2001), 45(4), 380-384

CODEN: GLFAF5

PB GIT Verlag GmbH

DT Journal

LA German
CC 80-6 (Organic Analytical Chemistry)
AB The sepn. of calixarene and calixarene derivs. occurring as byproducts in the industrial novolak resin prodn. was studied with liq. adsorption chromatog. at crit. conditions (LACCC). The LACCC was performed on a RP-phase column using a THF/water mixt. with 0.1% trifluoroacetic acid and a coupling with MALDI-TOF mass spectrometry was used for the identification of the calixarenes. For the characterization of an octylphenol novolak and a p-octyl calixarene mixt. the crit. solvent compn. was detd. where octyl calixarenes with different ring sizes eluted at the same retention time whereas the novolak appears sepd. in the chromatogram. As for an increasing hydrophobic character of the calixarenes a lower polarity of the mobile phase is required for the elution of the calixarenes this was further used to sep. differently substituted calixarenes. In addn. substituted calixarene were sepd. according to their ring sizes using the crit. conditions for octyl calixarenes.

ST liq adsorption chromatog MALDI MS calixarene detn
IT Liquid chromatography
(adsorption, at crit. conditions; calixarene detn. by coupling of liq. chromatog. with MALDI-TOF-MS)
IT Hyphenated techniques
Time-of-flight mass spectrometry
(calixarene detn. by coupling of liq. chromatog. with MALDI-TOF-MS)
IT Metacyclophanes
RL: ANT (Analyte); ANST (Analytical study)
(calixarenes; calixarene detn. by coupling of liq. chromatog. with MALDI-TOF-MS)
IT Laser ionization mass spectrometry
(**photodesorption**, matrix-assisted; calixarene detn. by coupling of liq. chromatog. with MALDI-TOF-MS)
IT Laser desorption mass spectrometry
(**photoionization**, matrix-assisted; calixarene detn. by coupling of liq. chromatog. with MALDI-TOF-MS)
IT 42607-92-1 53255-02-0 59288-62-9 60705-62-6 **68971-82-4**
68971-85-7 74568-07-3 78092-53-2 79942-31-7 81475-22-1
82452-92-4 82452-93-5 83933-03-3 96107-95-8 135549-05-2
138452-84-3
RL: ANT (Analyte); ANST (Analytical study)
(calixarene detn. by coupling of liq. chromatog. with MALDI-TOF-MS)

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Belenkii, B; J Chromatogr 1978, V147, P99 CAPLUS
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(3) Fischer, C; Eur J Org Chem 1998, P155 CAPLUS
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L4 ANSWER 3 OF 20 CAPLUS COPYRIGHT 2002 ACS
AN 2001:298802 CAPLUS
DN 135:92321
TI The inclusion complexation of dye guest molecules with water-soluble calixarene
AU Han, Bao-Hang; Liu, Yu; Chen, Rong-Ti
CS Department of Chemistry, Nankai University, Tianjin, 300071, Peop. Rep. China
SO Huaxue Xuebao (2001), 59(4), 550-555
CODEN: HHHPA4; ISSN: 0567-7351

PB Kexue Chubanshe
 DT Journal
 LA Chinese
 CC 22-12 (Physical Organic Chemistry)
 Section cross-reference(s): 41
 AB The inclusion complexation of some dye guest mols. with water-sol. calix[n]arenesulfonates (n = 4,6,8) and alkylated calix[6]arenesulfonates has been investigated at 25.0.degree.C. It was found that the fluorescence intensity of dye guests decreases upon the addn. of calix[n]arenesulfonates, while the alkylated calix[6]arenesulfonate derivs. cause gradual increases in the fluorescence intensity of dye guest. The phenomena were explained in terms of **photophys.** behavior. The stability consts. of the resultant complexes were detd. via spectrofluorometric titrn. at 25.0.degree.C and the mol. recognition behavior was also discussed.
 ST dye inclusion calixarene
 IT Metacyclophanes
 RL: PRP (Properties); RCT (Reactant); RACT (Reactant or reagent)
 (calixarenes; inclusion complexation of dye guest mols. with water-sol. calixarenes)
 IT Fluorescence
 Fluorescence quenching
 Fluorescent dyes
 Formation constant
 Inclusion reaction
 Molecular recognition
 (inclusion complexation of dye guest mols. with water-sol. calixarenes)
 IT Free energy
 (of inclusion reaction; inclusion complexation of dye guest mols. with water-sol. calixarenes)
 IT 348109-88-6 348109-89-7 348109-90-0 348109-91-1 348109-92-2
 348109-93-3 348109-94-4 348109-95-5 348109-96-6
 RL: FMU (Formation, unclassified); PRP (Properties); FORM (Formation, nonpreparative)
 (inclusion complexation of dye guest mols. with water-sol. calixarenes)
 IT 65-61-2, Acridine orange 92-32-0, Pyronine Y 2150-48-3, Pyronine B
 2465-29-4, Acridine red 60705-62-6 **68971-82-4** 78092-53-2
 348109-86-4 348109-87-5
 RL: PRP (Properties); RCT (Reactant)
 (inclusion complexation of dye guest mols. with water-sol. calixarenes)
 IT 114332-16-0P
 RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
 (inclusion complexation of dye guest mols. with water-sol. calixarenes)
 L4 ANSWER 4 OF 20 CAPLUS COPYRIGHT 2002 ACS
 AN 2001:272887 CAPLUS
 DN 135:61583
 TI Synthesis and **photoinduced** deprotection of calixarene derivatives containing certain protective groups
 AU Nishikubo, Tadatomi; Kameyama, Atsushi; Tsutsui, Kousuke; Kishimoto, Shinichi
 CS Department of Applied Chemistry, Faculty of Engineering, Kanagawa University, Yokohama, 221-8686, Japan
 SO Journal of Polymer Science, Part A: Polymer Chemistry (2001), 39(9), 1481-1494
 CODEN: JPACEC; ISSN: 0887-624X
 PB John Wiley & Sons, Inc.
 DT Journal
 LA English
 CC 35-2 (Chemistry of Synthetic High Polymers)
 AB Calixarene derivs. 1, 2, and 3 contg. pendant tert-butoxycarbonyl (t-BOC) groups were synthesized in 81, 93, and 83% yield, resp., by the reaction of C-methylcalix[4]resorcinarene (CRA), p-methylcalix[6]arene (MCA), and p-tert-butylcalix[8]arene (BCA) with di-tert-Bu dicarbonate using triethylamine as a base in pyridine. Calixarene derivs. contg. pendant trimethylsilyl ether (TMSE) groups were obtained in 58, 50, and 82%

yields, resp., by the reaction of CRA, MCA, and BCA with 1,1,1,3,3,3-hexamethyldisilazane using chlorotrimethylsilane as an accelerator in THF. Calixarene derivs. contg. pendant cyclohexenyl ether (CHE) groups were also prepd. in 65, 78, and 84% yields, resp., by the reaction of CRA, MCA, and BCA with 3-bromocyclohexene using KOH as base and tetrabutylammonium bromide as phase-transfer catalyst in N-methyl-2-pyrrolidone. The **photoinduced** deprotection of calixarene derivs. 1-3 was examd. with bis-[4-(diphenylsulfonio)phenyl]sulfide bis(hexafluorophosphate) as a **photoacid** generator on UV irradiation. followed by heating in the film state, and the deprotection of the t-BOC groups of proceeded smoothly in high conversion. The deprotection rate of the t-BOC groups of 2 and 3 was much lower than that of 1 under the same irradiation conditions. The **photoinduced** deprotection of calixarenes contg. tetramethylsilane groups and CHE groups was also examd. under similar reaction conditions; the deprotection rate of the substituted compds. was lower than that of 1-3 calixarenes.

- ST calixarene butoxycarbonyl prepn **photoinduced** deprotection
diphenylsulfoniophenylsulfide fluorophosphate; trimethylsilyl ether
calixarene prepn **photoinduced** deprotection rate; cyclohexenyl
ether calixarene prepn **photoinduced** deprotection rate
- IT Protective groups
(**photoinduced** deprotection; synthesis and
photoinduced deprotection of calixarene derivs. contg. t-BOC
and trimethylsilyl ether cyclohexenyl ether protective groups)
- IT **Photolysis**
Photolysis kinetics
(synthesis and **photoinduced** deprotection of calixarene
derivs. contg. t-BOC and trimethylsilyl ether cyclohexenyl ether
protective groups)
- IT 74227-35-3, Bis-[4-(diphenylsulfonio)phenyl]sulfide
bis(hexafluorophosphate)
RL: NUU (Other use, unclassified); USES (Uses)
(deprotection reagent; synthesis and **photoinduced**
deprotection of calixarene derivs. contg. t-BOC and trimethylsilyl
ether cyclohexenyl ether protective groups)
- IT 1643-19-2, Tetra-n-butylammonium bromide
RL: CAT (Catalyst use); USES (Uses)
(phase-transfer catalyst; synthesis and **photoinduced**
deprotection of calixarene derivs. contg. t-BOC and trimethylsilyl
ether cyclohexenyl ether protective groups)
- IT 75-77-4, Chlorotrimethylsilane, reactions 1521-51-3, 3-Bromocyclohexene
24424-99-5, Di-tert-butyl dicarbonate 65338-98-9, C-
Methylcalix[4]resorcinarene **68971-82-4**, p-tert-
Butylcalix[8]arene 79942-31-7, p-Methylcalix[6]arene
RL: RCT (Reactant)
(synthesis and **photoinduced** deprotection of calixarene
derivs. contg. t-BOC and trimethylsilyl ether cyclohexenyl ether
protective groups)
- IT **68971-83-5P**, 5,11,17,23,29,35,41,47-Octa-tert-butyl-
49,50,51,52,53,54,55,56-octakis[(trimethylsilyl)oxy]calix[8]arene
160399-38-2P, 2,8,14,20-Tetramethyl-4,6,10,12,16,18,22,24-
octakis[(trimethylsilyl)oxy]calix[4]resorcinarene 250715-26-5P,
5,11,17,23,29,35,41,47-Octa-tert-butyl-49,50,51,52,53,54,55,56-
octakis[(tert-butoxycarbonyl)oxy]calix[8]arene 250715-27-6P,
5,11,17,23,29,35-Hexamethyl-37,38,39,40,41,42-hexakis[(tert-
butoxycarbonyl)oxy]calix[6]arene 250715-31-2P, 2,8,14,20-Tetramethyl-
4,6,10,12,16,18,22,24-octakis[(tert-butoxycarbonyl)-
oxy]calix[4]resorcinarene 250715-32-3P, 5,11,17,23,29,35-Hexamethyl-
37,38,39,40,41,42-hexakis[(trimethylsilyl)-oxy]calix[6]arene
250715-35-6P, 5,11,17,23,29,35,41,47-Octa-tert-butyl-
49,50,51,52,53,54,55,56-octakis[(3-cyclohexenyl)oxy]calix[8]arene
250715-36-7P, 5,11,17,23,29,35-Hexamethyl-37,38,39,40,41,42-hexakis[(3-
cyclohexenyl)oxy]calix[6]arene 346406-91-5P, 2,8,14,20-Tetramethyl-
4,6,10,12,16,18,22,24-octakis[(3-cyclohexenyl)oxy]calix[4]resorcinarene
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(synthesis and **photoinduced** deprotection of calixarene

derivs. contg. t-BOC and trimethylsilyl ether cyclohexenyl ether protective groups)

RE.CNT 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD
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L4 ANSWER 5 OF 20 CAPLUS COPYRIGHT 2002 ACS

AN 2001:227550 CAPLUS

DN 135:33719

TI Synthesis of **photoreactive** calixarene derivatives containing pendant cyclic ether groups

AU Nishikubo, Tadatomi; Kameyama, Atsushi; Tsutsui, Kousuke

CS Department of Applied Chemistry, Faculty of Engineering, Kanagawa University, Yokohama, 221-8686, Japan

SO Journal of Polymer Science, Part A: Polymer Chemistry (2001), 39(8), 1169-1179

CODEN: JPACEC; ISSN: 0887-624X

PB John Wiley & Sons, Inc.

DT Journal

LA English

CC 35-7 (Chemistry of Synthetic High Polymers)

AB New **photoreactive** calixarene derivs. contg. cationically polymerizable pendant oxetane groups were synthesized in good yields by the substitution reaction of C-methylcalix[4]resorcinarene (CRA), p-methylcalix[6]arene (MCA), and p-tert-butylcalix[8]arene (BCA) with (3-methyloxetan-3-yl)methyl 4-toluenesulfonate and (3-ethyloxetan-3-yl)methyl 4-toluenesulfonate with potassium hydroxide as a base and tetrabutylammonium bromide as a phase transfer catalyst in N-methyl-2-pyrrolidone, resp. Calixarene derivs. contg. cationically polymerizable pendant oxirane groups were also prepd. in good yields by the substitution reaction of CRA, MCA, and BCA with epibromohydrin, resp., with cesium carbonate as a base in N-methyl-2-pyrrolidone. The thermal stability of the obtained calixarene derivs. contg. pendant oxetane groups or oxirane groups was examd. with thermogravimetric anal., and it was found that these calixarene derivs. had thermal stability beyond 340 .degree.C. The **photochem.** reaction of calixarenes contg. pendant oxetane groups was examd. with certain **photoacid** generators in the film state. In this reaction system, calixarene 1a, composed of a CRA structure and pendant (3-methyloxetan-3-yl)methyl groups, showed the highest **photochem.** reactivity when bis-[4-(diphenylsulfonio)phenyl]sulfide bis(hexafluorophosphate) was used as the catalyst. The **photochem.** reaction of calixarenes contg. pendant oxirane groups was also examd., and it was found that the **photoinitiated** cationic polymn. of these calixarenes proceeded smoothly under the same conditions; however, the reaction rates were lower than those of the corresponding calixarenes contg. pendant oxetane groups.

ST **photoreactive** calixarene deriv pendant cyclic ether; oxetane

calixarene deriv **photoreactive** prepn; oxirane calixarene deriv
photoreactive prepn
IT Metacyclophanes
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)
(calixarenes; prepn. and polymn. of **photoreactive** calixarene
derivs. contg. pendant cyclic ether groups)
IT Polymerization
(cationic, **photochem.**; prepn. and polymn. of
photoreactive calixarene derivs. contg. pendant cyclic ether
groups)
IT 3132-64-7, Epibromohydrin **68971-82-4**, p-tert-Butylcalix[8]arene
79942-31-7, p-Methylcalix[6]arene
RL: RCT (Reactant)
(in prepn. of **photoreactive** calixarene derivs. contg. pendant
cyclic ether groups)
IT 65338-98-9P 99314-44-0P 237403-65-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(in prepn. of **photoreactive** calixarene derivs. contg. pendant
cyclic ether groups)
IT 237403-63-3P 237403-64-4P 243853-43-2P 243853-44-3P 259823-37-5P
343784-06-5P 343784-07-6P 343784-08-7P 343784-09-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and **photoinitiated** cationic polymn. of)
IT 343784-10-1P 343784-11-2P 343784-12-3P 343784-13-4P 343784-14-5P
343784-15-6P 343784-16-7P 343784-17-8P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. by **photoinitiated** cationic polymn.)
IT 98-59-9, p-Toluenesulfonyl chloride
RL: RCT (Reactant)
(reaction with hydroxymethylmethyloxetane)
IT 108-46-3, Resorcinol, reactions
RL: RCT (Reactant)
(reaction with paraldehyde)
IT 123-63-7, Paraldehyde
RL: RCT (Reactant)
(reaction with resorcinol)
IT 3047-32-3, 3-Hydroxymethyl-3-ethyloxetane 3143-02-0,
3-Hydroxymethyl-3-methyloxetane
RL: RCT (Reactant)
(reaction with toluenesulfonyl chloride)

RE.CNT 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD

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L4 ANSWER 6 OF 20 CAPLUS COPYRIGHT 2002 ACS

AN 2000:653730 CAPLUS

DN 133:238532

TI Calixarene derivatives and low-mold-shrinkage curable resin compositions containing them

IN Nishikubo, Tadaomi; Kameyama, Atsushi; Ando, Yoshinori

PA Kuraray Co., Ltd., Japan; Kanagawa University

SO Jpn. Kokai Tokkyo Koho, 11 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C07D493-10

ICS C08G004-00; C08G008-36; C08G065-16; C08G085-00

CC 35-7 (Chemistry of Synthetic High Polymers)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000256362	A2	20000919	JP 1999-61087	19990309
OS	MARPAT 133:238532				

AB The title derivs. are calixarenes bearing spiro-orthoester groups. Thus, mixing 0.34 g calix[4]resorcinarene with 1.96 g cesium carbonate in 3 mL N-methyl-2-pyrrolidone at room temp. for 5 h, adding 0.08 g tetrabutylammonium bromide and 1.15 g Me bromoacetate, mixing at 70.degree. for 48 h and working up gave 2,8,14,20-tetramethyl-4,6,10,12,16,18,22,24-octakis[(methoxycarbonyl)methoxy]calix[4]resorcinarene which was hydrolyzed, heated with 1,8-diazabicyclo[5.4.0]-7-undecene in N-methyl-2-pyrrolidone at 60.degree. for 12 h and derivatized with 2-bromomethyl-1,4,6-trioxaspiro[4.4]nonane to give a title deriv.

ST spiro orthoester deriv calixarene manuf; resorcinarene calixarene compd manuf

IT Metacyclophanes

RL: IMF (Industrial manufacture); PREP (Preparation)
(calixarenes; calixarene derivs. and low-mold-shrinkage curable resin compns. contg. them)

IT 294182-92-6P 294182-93-7P 294182-94-8P

RL: IMF (Industrial manufacture); PREP (Preparation)
(calixarene derivs. and low-mold-shrinkage curable resin compns. contg. them)

IT 96-32-2, Methyl bromoacetate

RL: MOA (Modifier or additive use); USES (Uses)
(carboxylating agent; calixarene derivs. and low-mold-shrinkage curable resin compns. contg. them)

IT 84298-07-7

RL: MOA (Modifier or additive use); USES (Uses)
(derivatization agent; calixarene derivs. and low-mold-shrinkage curable resin compns. contg. them)

IT 97600-42-5P 116851-59-3P 130508-38-2P 203063-80-3P 294182-90-4P
294182-91-5P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation)
(intermediate; calixarene derivs. and low-mold-shrinkage curable resin compns. contg. them)

IT 294182-95-9P 294182-96-0P 294182-97-1P

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**photocurable** resins; calixarene derivs. and low-mold-shrinkage curable resin compns. contg. them)

IT 65338-98-9 **68971-82-4**, p-tert-Butylcalix[8]arene 79942-31-7,
p-Methylcalix[6]arene

RL: RCT (Reactant)
(starting material; calixarene derivs. and low-mold-shrinkage curable resin compns. contg. them)

L4 ANSWER 7 OF 20 CAPLUS COPYRIGHT 2002 ACS

AN 2000:182832 CAPLUS

DN 132:321601
 TI Effect of addition of calix[n]arenes on **photooxygenation** of
 4,5-diphenylimidazolones
 AU Chawla, H. Mohindra; Pathak, Manisha
 CS Department of Chemistry, Indian Institute of Technology, New Delhi, 110
 016, India
 SO J. Indian Chem. Soc. (2000), 77(2), 98-99
 CODEN: JICSAH; ISSN: 0019-4522
 PB Indian Chemical Society
 DT Journal
 LA English
 CC 22-7 (Physical Organic Chemistry)
 AB Rates of dye-sensitized **photo-oxygenation** of
 4,5-diphenylimidazolones increase markedly on addn. of calix[n]arenes.
 The effect of addn. of calix[6]arenes is more pronounced than that of
 calix[4]- and calix[8]arenes and it varies with the size of the alkyl
 group (octyl > hexyl > t-Bu > Me > H) in the same calixarene series.
 ST calixarene catalyzed **photooxygenation** imidazolone deriv
 IT Chemical chains
 (alkyl-group chain length; p-R-calix[n]arene-catalyzed
photooxygenation of 4,5-diphenylimidazolones as function of
 cavity size n and alkyl group R chain length)
 IT Metacyclophanes
 RL: CAT (Catalyst use); USES (Uses)
 (calixarenes; p-R-calix[n]arene-catalyzed **photooxygenation** of
 4,5-diphenylimidazolones as function of cavity size n and alkyl group R
 chain length)
 IT Oxidation, **photochemical**
 (p-R-calix[n]arene-catalyzed **photooxygenation** of
 4,5-diphenylimidazolones as function of cavity size n and alkyl group R
 chain length)
 IT Oxidation catalysts
 (**photooxidn.**; p-R-calix[n]arene-catalyzed
photooxygenation of 4,5-diphenylimidazolones as function of
 cavity size n and alkyl group R chain length)
 IT 78077-33-5, p-tert-Butylcalix[8]arene octaacetate
 RL: CAT (Catalyst use); USES (Uses)
 (inactive; p-R-calix[n]arene-catalyzed **photooxygenation** of
 4,5-diphenylimidazolones as function of cavity size n and alkyl group R
 chain length)
 IT 59288-62-9, p-Methylcalix[5]arene 60705-62-6, p-tert-Butylcalix[4]arene
68971-82-4, p-tert-Butylcalix[8]arene 74568-07-3, Calix[4]arene
 78092-53-2, p-tert-Butylcalix[6]arene 102622-25-3, p-Octylcalix[6]arene
 RL: CAT (Catalyst use); USES (Uses)
 (p-R-calix[n]arene-catalyzed **photooxygenation** of
 4,5-diphenylimidazolones as function of cavity size n and alkyl group R
 chain length)
 IT 965-04-8, N,N'-Dibenzoylurea
 RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
 (p-R-calix[n]arene-catalyzed **photooxygenation** of
 4,5-diphenylimidazolones as function of cavity size n and alkyl group R
 chain length)
 IT 642-36-4D, 4,5-diphenyl-2-imidazolone
 RL: RCT (Reactant)
 (p-R-calix[n]arene-catalyzed **photooxygenation** of
 4,5-diphenylimidazolones as function of cavity size n and alkyl group R
 chain length)

RE.CNT 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD

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L4 ANSWER 8 OF 20 CAPLUS COPYRIGHT 2002 ACS
 AN 1999:744383 CAPLUS
 DN 132:7560

TI Acid-decomposable group-containing calixarenes, calixresorcinarenes, and
photosensitive composition for resist

IN Nishikubo, Tadaomi; Kameyama, Atsushi; Ota, Yoshihisa

PA JSR Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 15 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C07C043-235

ICS C07C069-33; C07F007-18; G03F007-039

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)

Section cross-reference(s): 25

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	JP 11322656	A2	19991124	JP 1998-146597	19980511
OS	MARPAT 132:7560				
GI	For diagram(s), see printed CA Issue.				
AB	The compn. contains .gtoreq.1 calix(resorcin)arenes I (R1, R2 = H, C1-5 alkyl; R3 = H, O2CBu-t, SiMe3, cyclohexenyl; n = 1-3; m = 4-12) and a photo -acid generator. The compn. is useful as pos.-working chem. amplified resists.				
ST	calixarene calixresorcinarene photosensitive compn resist; acid decomposable calixarene calixresorcinarene photoresist				
IT	Positive photoresists (acid-decomposable group-contg. calixarenes or calixresorcinarenes for photoresists)				
IT	Metacyclophanes RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (calixarenes; acid-decomposable group-contg. calixarenes or calixresorcinarenes for photoresists)				
IT	108-46-3, 1,3-Benzenediol, reactions 123-63-7 1521-51-3, 3-Bromocyclohexene 68971-82-4 , p-tert-Butylcalix(8)arene 250715-27-6 250715-28-7, p-Methylcalix(7)arene 250715-30-1, p-Methylcalix(8)arene RL: RCT (Reactant) (acid-decomposable group-contg. calixarenes or calixresorcinarenes for photoresists)				
IT	65338-98-9P, Calix[4]resorcinarene 68971-83-5P 160399-38-2P 250715-26-5P 250715-31-2P 250715-32-3P 250715-33-4P 250715-34-5P 250715-35-6P 250715-36-7P 250715-37-8P 250715-39-0P 250715-40-3P RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (acid-decomposable group-contg. calixarenes or calixresorcinarenes for photoresists)				

L4 ANSWER 9 OF 20 CAPLUS COPYRIGHT 2002 ACS
 AN 1999:328222 CAPLUS
 DN 131:130330

TI Synthesis and **photochemical** reaction of novel
 p-alkylcalix[n]arene derivatives containing cationically polymerizable
 groups
 AU Nishikubo, Tadatomi; Kameyama, Atsushi; Tsutsui, Kousuke; Iyo, Masami
 CS Department of Applied Chemistry, Faculty of Engineering, Kanagawa
 University, Yokohama, 221-8686, Japan
 SO J. Polym. Sci., Part A: Polym. Chem. (1999), 37(12), 1805-1814
 CODEN: JPACEC; ISSN: 0887-624X
 PB John Wiley & Sons, Inc.
 DT Journal
 LA English
 CC 35-4 (Chemistry of Synthetic High Polymers)
 AB New **photoreactive** p-methylcalix[6]arene (MCA) derivs. contg.
 cationically polymerizable groups such as propargyl ether (calixarene 1),
 allyl ether (calixarene 2), and ethoxy vinyl ether (calixarene 3) groups
 were synthesized with 80, 74, and 84% yields by the substitution reaction
 of MCA with propargyl bromide, allyl bromide, and 2-chloroethyl vinyl
 ether (CEVE), resp., in the presence of either potassium hydroxide or
 sodium hydride by using tetrabutylammonium bromide (TBAB) as a phase
 transfer catalyst (PTC). The p-tert-butylcalix[8]arene (BCA) deriv.
 contg. ethoxy vinyl ether groups (calixarene 4) was also synthesized in
 83% yield by the substitution reaction of BCA with CEVE by using sodium
 hydride as a base and TBAB as a PTC. The MCA deriv. contg. 1-propenyl
 ether groups (calixarene 5) was synthesized in 80% yield by the
 isomerization of calixarene 2, which contained allyl ether groups, by
 using potassium tert-butoxide as a catalyst. The **photochem.**
 reactions of calixarene 1, 3, 4, 5, and 6 were examd. with certain
photoacid generators in the film state. In this reaction system,
 calixarene 3 contg. ethoxy vinyl ether groups showed the highest
photochem. reactivity when bis-[4-(diphenylsulfonio)phenyl]sulfide
 bis(hexafluorophosphate) (DPSP) was used as the catalyst. On the other
 hand, calixarene 1 contg. propargyl ether groups had the highest
photochem. reactivity when 4-morpholino-2,5-
 dibutoxybenzenediazonium hexafluorophosphate (MDBZ) was used as the
 catalyst. It was also found that the prepd. calixarene derivs. contg.
 cationically polymerizable groups such as propargyl, allyl, vinyl, and
 also 1-propenyl ethers have good thermal stability.
 ST **photochem** polymn vinyl propargyl propenyl calixarene; catalyst
photochem polymn unsatd alkylcalixarene
 IT Polymerization
 Polymerization catalysts
 (cationic, **photochem.**; synthesis and **photochem.**
 polymn. of alkylcalix[n]arene derivs. contg. cationically polymerizable
 groups)
 IT Addition reaction catalysts
 Glass transition temperature
 Isomerization
 Solubility
 Thermal stability
 (synthesis and **photochem.** polymn. of alkylcalix[n]arene
 derivs. contg. cationically polymerizable groups)
 IT Metacyclophanes
 RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP
 (Preparation)
 (unsatd. derivs.; synthesis and **photochem.** polymn. of
 alkylcalix[n]arene derivs. contg. cationically polymerizable groups)
 IT 1112-67-0, Tetrabutylammonium chloride 1643-19-2, Tetrabutylammonium
 bromide 2304-30-5, Tetrabutylphosphonium chloride 3115-68-2,
 Tetrabutylphosphonium bromide 6674-22-2 7447-40-7, Potassium chloride
 (KCl), uses 7758-02-3, Potassium bromide (KBr), uses 17455-13-9,
 18-Crown-6
 RL: CAT (Catalyst use); USES (Uses)
 (in unsatd. calixarene prepn.; synthesis and **photochem.**
 polymn. of alkylcalix[n]arene derivs. contg. cationically polymerizable
 groups)
 IT 106-95-6, Allyl bromide, reactions 106-96-7, Propargyl bromide
 3678-15-7, Glycidyl vinyl ether

RL: RCT (Reactant)
(in unsatd. calixarene prepn.; synthesis and **photochem.** polymn. of alkylcalix[n]arene derivs. contg. cationically polymerizable groups)

IT 110-75-8, 2-Chloroethyl vinyl ether
RL: RCT (Reactant)
(isomerization of; synthesis and **photochem.** polymn. of alkylcalix[n]arene derivs. contg. cationically polymerizable groups)

IT 233775-59-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(isomerization of; synthesis and **photochem.** polymn. of alkylcalix[n]arene derivs. contg. cationically polymerizable groups)

IT 32760-80-8 68015-88-3, 4-Morpholino-2,5-dibutoxybenzenediazonium hexafluorophosphate 74227-35-3, Bis-[4-(diphenylsulfonio)phenyl]sulfide bis(hexafluorophosphate)
RL: CAT (Catalyst use); USES (Uses)
(synthesis and **photochem.** polymn. of alkylcalix[n]arene derivs. contg. cationically polymerizable groups)

IT 68971-82-4, p-tert-Butylcalix[8]arene 79942-31-7
RL: RCT (Reactant)
(synthesis and **photochem.** polymn. of alkylcalix[n]arene derivs. contg. cationically polymerizable groups)

IT 233775-58-1P 233775-60-5P 233775-61-6P 233775-62-7P 233775-63-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(synthesis and **photochem.** polymn. of alkylcalix[n]arene derivs. contg. cationically polymerizable groups)

IT 233775-64-9P 233775-65-0P 233775-66-1P 233775-67-2P 233775-69-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(synthesis and **photochem.** polymn. of alkylcalix[n]arene derivs. contg. cationically polymerizable groups)

RE.CNT 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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- (2) CMC; Synthesis and Application of Photosensitive Polymers 1979
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- (19) Ogasawara, T; Synthesis and Application of Photosensitive Polymers 1980, P403
- (20) Takeshita, M; Bull Chem Soc Jpn 1995, V68, P1088 CAPLUS
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L4 ANSWER 10 OF 20 CAPLUS COPYRIGHT 2002 ACS

AN 1998:486746 CAPLUS

DN 129:189003

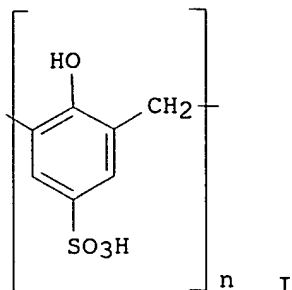
TI Effect of various cations on the acidity of p-sulfonatocalixarenes

AU Suga, Kosaku; Ohzono, Takuya; Negishi, Makoto; Deuchi, Kouji; Morita, Yutaka

CS Department of Biomolecular Engineering, Tokyo Institute of Technology, Yokohama, 226, Japan

SO Supramol. Sci. (1998), 5(1-2), 9-14

CODEN: SUSCFX; ISSN: 0968-5677



- AB **Photometric** and pH-metric titrn. curves of p-sulfonatocalixarenes, C[n]ASO₃H (I; n = 4, 6, 8), were measured in the presence of electrolytes of various cations. These titrn. curves revealed that the presence of tetramethylammonium (TMA⁺) and tetraethylammonium (TEA⁺) ions largely decreased pK_a values for C[n]ASO₃H (n = 4, 6, 8), while alkali and alk.-earth metal cations had small effects. Comparison of the pH dependence of absorption spectra for C[n]ASO₃H (n = 4, 6, 8) with that for corresponding monomer, p-hydroxybenzenesulfonate, indicated that the small values of pK_{a1} and pK_{a2} obsd. for C[8]ASO₃H were attributable to dissocn. of its OH groups in this compd. The dependence of pK_a values for C[4]ASO₃H and p-hydroxybenzenesulfonate on the concn. of NaCl was due to the difference in their activity coeffs. before and after their deprotonation steps estd. on the basis of Debye-Huckel theory. These results suggested that C[n]ASO₃H (n = 4, 6, 8) hardly formed stable complexes with Na⁺ or other alkali metal cations in aq. solns. while C[n]ASO₃H (n = 4, 6, 8) formed stable complexes with tetraalkylammonium cations. It was also shown that the p-sulfonatophenol or p-sulfonatophenoxide units in the calixarene interacted independently with ionic atmospheres formed around the phenol units.
- ST calixarene ionization const cation effect
- IT Alkali metal ions
 Alkaline earth ions
 RL: PRP (Properties)
 (activity effect; effect of various cations on the acidity of p-sulfonatocalixarenes)
- IT Activity (thermodynamic)
 (alkali metal cation effects; effect of various cations on the acidity of p-sulfonatocalixarenes)
- IT Ionization constant
 (effect of various cations on the acidity of p-sulfonatocalixarenes)
- IT Metacyclophanes
 Sulfonic acids, properties
 RL: PRP (Properties)
 (effect of various cations on the acidity of p-sulfonatocalixarenes)
- IT Quaternary ammonium compounds, properties
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
 (inclusion effect; effect of various cations on the acidity of p-sulfonatocalixarenes)
- IT Inclusion reaction
 (of quaternary ammonium ions; effect of various cations on the acidity of p-sulfonatocalixarenes)
- IT 51-92-3, Tetramethylammonium ion 66-40-0 14127-61-8, Calcium ion, properties 17341-25-2, Sodium ion, properties 22541-12-4, Barium ion, properties 24203-36-9, Potassium ion, properties
 RL: PRP (Properties)
 (effect of various cations on the acidity of p-sulfonatocalixarenes)

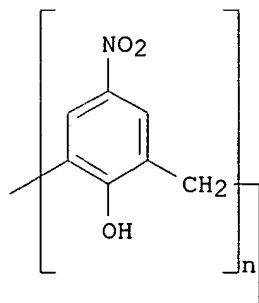
IT 102088-39-1 112269-92-8 137407-62-6
 RL: PRP (Properties)
 (ionization const. in presence of electrolytes; effect of various cations on the acidity of p-sulfonatocalixarenes)

IT 96107-96-9 105190-41-8 110242-20-1
 RL: PRP (Properties)
 (ionization const.; effect of various cations on the acidity of p-sulfonatocalixarenes)

IT 825-90-1, Sodium p-hydroxybenzenesulfonate
 RL: PRP (Properties)
 (monomer unit; effect of various cations on the acidity of p-sulfonatocalixarenes)

L4 ANSWER 11 OF 20 CAPLUS COPYRIGHT 2002 ACS
 AN 1998:277408 CAPLUS
 DN 129:10630
 TI Positive-working chemical amplification-type **photosensitive** resin composition containing polyphenols and method for manufacturing resist images
 IN Kato, Koji; Hashimoto, Masahiro; Hashimoto, Michiaki
 PA Hitachi Chemical Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 8 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM G03F007-039
 ICS G03F007-004; H01L021-027
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10115926	A2	19980506	JP 1997-210284	19970805
PRAI	JP 1996-221938		19960823		
OS	MARPAT 129:10630				
GI					



I

AB A pos.-type chem. amplification-series **photosensitive** resin compn. contains (a) a resin sol. in aq. alkali soln., (b) polynitrophenols (calixarene) (I; n = 4-8), (c) a compd. generating an acid upon irradiation with active chem. ray, and (d) a compd. possessing on the side chain, a group decomposable by acid which increases soly. in aq. alkali soln. by acid-catalyzed reaction. The content of low-mol. wt. component having mol. wt. .ltoreq.2,000 as polystyrene in the above compn. is .ltoreq.10 wt.%,. Also claimed is a method for prepg. resist images, in which the coating of above resin compn. is irradiated with active chem. ray and then developed. The compn. provides resist patterns of good resolu. and shows high sensitivity, high degree of resolu., and high heat resistance and is used for microprocessing of semiconductor devices.

ST pos working **photoresist** alkali sol; semiconductor device manuf
photoresist; polyphenol **photoresist** chem amplification
photoresist; calixarene pos working **photoresist**

IT Positive **photoresists**
Semiconductor devices
(pos.-working chem. amplification-type **photosensitive** resin
compn. contg. polyphenols and method for manufg. resist images)

IT Metacyclophanes
Novolaks
RL: SPN (Synthetic preparation); TEM (Technical or engineered material
use); PREP (Preparation); USES (Uses)
(pos.-working chem. amplification-type **photosensitive** resin
compn. contg. polyphenols and method for manufg. resist images)

IT 50-00-0, Formaldehyde, reactions 98-54-4 24979-70-2,
Poly(p-vinylphenol)
RL: RCT (Reactant)
(pos.-working chem. amplification-type **photosensitive** resin
compn. contg. polyphenols and method for manufg. resist images)

IT 60705-62-6P **68971-82-4P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(pos.-working chem. amplification-type **photosensitive** resin
compn. contg. polyphenols and method for manufg. resist images)

IT 24979-70-2DP, Poly(p-vinylphenol), tetrahydropyranyl-substituted
27029-76-1P, m-Cresol-p-cresol-formalin copolymer 60288-40-6P,
Trimethylsulfonium trifluoromethanesulfonate 109051-62-9P 109081-46-1P
RL: SPN (Synthetic preparation); TEM (Technical or engineered material
use); PREP (Preparation); USES (Uses)
(pos.-working chem. amplification-type **photosensitive** resin
compn. contg. polyphenols and method for manufg. resist images)

IT 9016-83-5, CN 19
RL: TEM (Technical or engineered material use); USES (Uses)
(pos.-working chem. amplification-type **photosensitive** resin
compn. contg. polyphenols and method for manufg. resist images)

L4 ANSWER 12 OF 20 CAPLUS COPYRIGHT 2002 ACS

AN 1996:399850 CAPLUS

DN 125:154141

TI **Photophysical** properties of lanthanide dinuclear complexes with
p-nitro-calix[8]arene

AU Buenzli, Jean-Claude G.; Ihringer, Frederic

CS Universite de Lausanne, Institut de Chimie Minerale et Analytique, BCH
1402, Lausanne, CH-1015, Switz.

SO Inorg. Chim. Acta (1996), 246(1-2), 195-205
CODEN: ICHAA3; ISSN: 0020-1693

DT Journal

LA English

CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)
Section cross-reference(s): 73

AB The ligand p-nitrocalix[8]arene, n-LH8, was synthesized and its acidity
const. were detd. at 25.degree.C in H2O/THF 70/30 vol./vol. by a
potentiometric method: pKa1 < 0, pKa2 = 2.6 +/- 0.1, pKa3 = 7.2 +/- 0.2,
pKa4 = 10.2 +/- 0.2, and pKa5-8 > 12. Upon reaction of n-LH8 with
lanthanide nitrates in DMF contg. an excess of triethylamine, lanthanide
dinuclear complexes are isolated whose elemental analyses correspond to
the formula [Ln1Ln2(n-LH2)(DMF)x](DMF)y(EtOH)z. Solvation is difficult to
control and different crystn. or drying conditions yield compds. with
different solvation. When two Ln(III) ions are added to the soln.,
compds. are isolated which contain a mixt. of the homo- and
heterodinuclear species. A small size discriminating effect is evidenced,
larger Ln(III) ions being apparently favored. Anal. of the luminescence
of the Eu(5D0) level reveals the following features: (i) the series of
complexes with Ln1 = Eu, and Ln2 = Nd, Gd, Tb, Ho appears to be approx.
isostructural, (ii) the two metal ion sites are similar and possess a low
site symmetry, and (iii) the Eu(III) environment is not well defined,
either because the compds. behave like 'glasses', with ligand mols.
adopting several comparable configurations, or because the solvent mols.
completing the coordination polyhedron of the Eu(III) ion occupy
statistical sites rendering the structure somewhat disordered. A
photophys. study of the ligand n-LH8, of the homodinuclear

complexes with Ln1 = Ln2 = Eu, Gd, Tb, Lu and of the heterodinuclear complexes has been performed. Compared to the situation for complexes with p-tert-butylcalix[8]arene, the ligand excited states are shifted to lower energy, henceforth the ligand-to-Tb(III) energy transfer no more occurs while the transfer to the Eu(III) ion is favored, the Eu(5D0) level and the ligand states being almost in resonance. The replacement of the p-tert-Bu groups by the electron-attracting nitro groups shifts the ligand-to-metal charge-transfer (LMCT) state of the Eu-contg. compds. to higher energy, which reduces the amt. of mixing between the Eu(7F) and the LMCT states, resulting in a less efficient quenching of the Eu(5D0) luminescence and in a less enhanced 5D0 \rightarrow 7F0 transition. Nevertheless, the latter still exhibits an unusually large oscillator strength (ca. 10^{-7} , $\epsilon = 0.84 \text{ l-mol}^{-1}\text{-cm}^{-1}$). Europium-to-lanthanide (Ln = Nd, Ho) energy transfer processes in heterodinuclear compds. allow one to est. the intermol. Eu-Ln distance to 10.3-10.5 \AA ., a value close to that reported for the p-tert-butylcalix[8]arene complexes. In conclusion, this study demonstrates the potential of calixarenes as host mols. for spectroscopically active metal ions since a simple modification of the para-substituents induces large differences in the **photophys.** properties of the dinuclear lanthanide complexes.

- ST **photophys** property lanthanide dinuclear complex nitrocalixarene
 IT Energy level splitting
 Luminescence
 Ultraviolet and visible spectra
 (**photophys.** properties of lanthanide dinuclear complexes with p-nitro-calix[8]arene)
 IT Rare earth compounds
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
 (complexes, dinuclear; **photophys.** properties of lanthanide dinuclear complexes with p-nitro-calix[8]arene)
 IT Energy transfer
 (**photochem.**, **photophys.** properties of lanthanide dinuclear complexes with p-nitro-calix[8]arene)
 IT 109081-46-1P
 RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
 (in prepn. of lanthanide dinuclear complexes with p-nitro-calix[8]arene)
 IT 109081-46-1D, europium and neodymium complexes
 RL: RCT (Reactant)
 (**photophys.** properties of lanthanide dinuclear complexes)
 IT 7440-00-8D, Neodymium, calix[8]arene complex, sold soln. with rare earth calixarene complexes 7440-53-1D, Europium, calix[8]arene complex, sold soln. with rare earth calixarene complexes 7440-54-2D, Gadolinium, calix[8]arene complex, sold soln. with rare earth calixarene complexes 7440-60-0D, Holmium, calix[8]arene complex, sold soln. with rare earth calixarene complexes 180140-71-0D, solid solns. with gadolinium and holmium and neodymium and terbium complexes 180140-72-1 180140-73-2 180140-74-3D, solid soln. with europium complex 180140-75-4 180140-76-5 180140-77-6 180140-78-7 180140-79-8D, solid soln. with europium complex 180140-81-2D, solid soln. with europium complex
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
 (**photophys.** properties of lanthanide dinuclear complexes with p-nitro-calix[8]arene)
 IT 68-12-2, DMF, properties 7440-27-9D, Terbium, calix[8]arene complex, sold soln. with rare earth calixarene complexes
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
 (**photophys.** properties of lanthanide dinuclear complexes with p-nitro-calix[8]arene contg.)
 IT **68971-82-4**
 RL: RCT (Reactant)
 (reaction with nitric acid in prepn. of p-nitro-calix[8]arene)

AN 1996:339269 CAPLUS
 DN 125:114047
 TI **Photodegradation** of calixarenes
 AU Meallier, P.; Gudefin, A.; Ehlinger, N.; Perrin, M.
 CS Lab. Photochim. Ind., LACE, UM 9977, Univ. Claude Bernard, Villeurbanne, 69622, Fr.
 SO Dyes Pigm. (1996), 31(1), 13-17
 CODEN: DYPIDX; ISSN: 0143-7208
 DT Journal
 LA English
 CC 22-8 (Physical Organic Chemistry)
 Section cross-reference(s): 41
 AB Calixarenes are interesting compds. with respect to their high m.ps. and complexing properties. Spectroscopic characteristics and **photochem.** stability data are reported in these present studies of quantum yield of fluorescence, phosphorescence and **photodegrdn.** The **photodegrdn.** occurs from the triplet state. The addn. of a chromophore into the mol., and the presence of a triplet inhibitor, are necessary for any potential use of these compds. in the color industry.
 ST **photodegrdn** calixarene
 IT Chromophores and Chromophoric systems
 Dyes
 Fluorescence
 Phosphorescence
Photolysis
 Ultraviolet and visible spectra
 (**photodegrdn.** of calixarenes)
 IT Cyclophanes
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); PROC (Process)
 (meta-, **photodegrdn.** of calixarenes)
 IT Energy level
 (singlet, **photodegrdn.** of calixarenes)
 IT Energy level
 (triplet, **photodegrdn.** of calixarenes)
 IT 60705-62-6 **68971-82-4** 78092-53-2 97998-55-5 98013-94-6
 104789-79-9
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); PROC (Process)
 (**photodegrdn.** of calixarenes)
 IT 98-54-4, p-tert-Butylphenol 99-89-8, p-Isopropylphenol
 RL: PRP (Properties)
 (**photodegrdn.** of calixarenes)
 L4 ANSWER 14 OF 20 CAPLUS COPYRIGHT 2002 ACS
 AN 1994:334992 CAPLUS
 DN 120:334992
 TI **Photosensitive** resin composition and resist image formation
 IN Kato, Koji; Kasuya, Kei; Isobe, Asao
 PA Hitachi Chemical Co Ltd, Japan
 SO Jpn. Kokai Tokkyo Koho, 9 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM G03F007-022
 ICS G03F007-023; G03F007-30; H01L021-027
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 76
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 05346664	A2	19931227	JP 1992-154911	19920615

GI For diagram(s), see printed CA Issue.
 AB The compn. comprises alkali-sol. novolak resin contg. 0-10 wt.% low mol. wt. compn. with mol. wt. .ltoreq.2000 (as polystyrene), a quinonediazide compd., and phenolic cyclic compd. I (n = 4-8). The compn. is coated,

exposed, and developed to form images. The compn. shows high sensitivity, resolu., thermal-resistance, and suitable for pos.-working resist for integrated circuits.

ST resist cyclic phenol compd; quinonediazide novolak resin resist

IT Phenolic resins, uses
RL: USES (Uses)
(novolak, pos.-working **photoresist** contg.)

IT Resists
(**photo-**, contg. novolak resin and quinonediazide compd. and cyclic phenol deriv.)

IT 27029-76-1, m-Cresol-p-cresol-formaldehyde copolymer 100346-90-5,
m-Cresol-p-cresol-formaldehyde-2,5-xyleneol copolymer 112504-03-7,
m-Cresol-p-cresol-formaldehyde-3,5-xyleneol copolymer
RL: USES (Uses)
(pos.-working **photoresist** contg.)

IT 60705-62-6P **68971-82-4P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and nitration of)

IT 109051-62-9P 109081-46-1P
RL: PREP (Preparation)
(prepn. of, pos.-working **photoresist** contg.)

IT 98-54-4, p-tert-Butylphenol
RL: RCT (Reactant)
(reaction of, with formaldehyde)

IT 50-00-0, Formaldehyde, reactions
RL: RCT (Reactant)
(reaction of, with tert-butylphenol)

L4 ANSWER 15 OF 20 CAPLUS COPYRIGHT 2002 ACS

AN 1994:148771 CAPLUS

DN 120:148771

TI Method for processing silver halide **photographic** material

IN Nishimura, Motoi; Sato, Koichi

PA Konishiroku Photo Ind, Japan

SO Jpn. Kokai Tokkyo Koho, 36 pp.
CODEN: JKXXAF

DT Patent

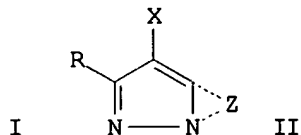
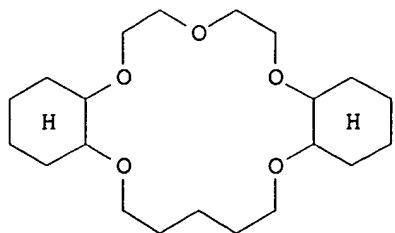
LA Japanese

IC ICM G03C011-00
ICS G03C007-38; G03C007-392

CC 74-2 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	JP 05093995	A2	19930416	JP 1991-253707	19911001
GI					



AB The title processing involves (1) treating a silver halide **photog** . material having a silver halide emulsion layer contg. a macrocyclic compd. by a processing soln. with a capability of color development and fixation and (2) stabilization treatment by a stabilizer soln. at a replenishment amt. of 20-1,000 mL/m2 said silver halide **photog**.

material. The said macrocyclic compd., e.g. a crown ether (I), which serves as a color image stabilizer, contains C.gtoreq.4 alkyl, alkenyl, or cycloalkyl and has a soly. of .gtoreq.10 in AcOEt at 60.degree.. The said silver halide **photog.** material contains a color formation coupler [II; Z = a group of nonmetallic atoms required to form an (un)substituted N-contg. heterocyclic ring; X = H, group capable of leaving upon reaction with the oxidized form of a color developing agent]. This processing can markedly reduce the replenishment amt. of a stabilizer soln. in continuous color development, bleaching, and fixation, improves **photostability** and color reprodn. of dye images formed, and reduces formation of stains during storage and color stains during processing.

ST silver halide **photog** continuous processing; macrocyclic compd
color image stabilizer; stabilizer soln reduced replenishment; crown ether
color image stabilizer

IT Crown compounds
Macrocyclic compounds
RL: USES (Uses)
(color image stabilizers, color **photog.** materials contg.)

IT **Photographic** paper
(color, contg. macrocyclic compds. as color image stabilizers, for
reduced color stains and improved **photostability** of dye
images)

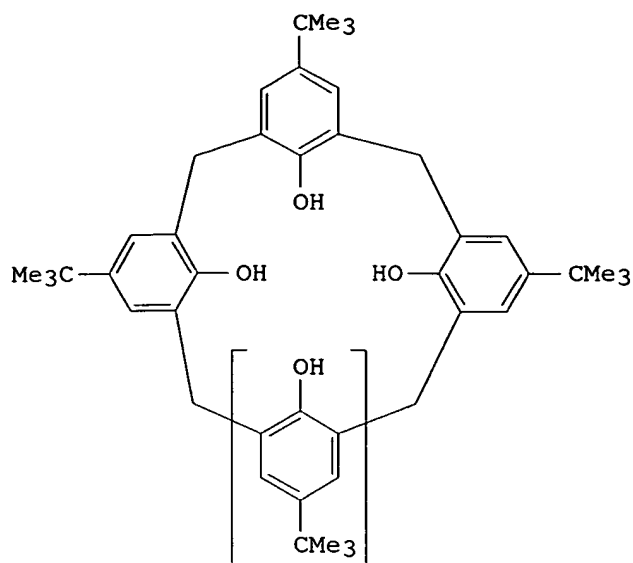
IT **Photographic** processing
(color, continuous, of color **photog.** materials contg.
macrocyclic compds. as color image stabilizers, with reduced
replenishment of stabilizer soln.)

IT Crown compounds
RL: USES (Uses)
(ethers, color image stabilizers, color **photog.** materials
contg.)

IT 296-35-5, 1,4,7,10,13,16-Hexaazacyclooctadecane 7585-39-9,
.beta.-Cyclodextrin 16069-36-6 67722-74-1 **68971-82-4**
147053-86-9 147053-87-0 147053-88-1 147053-89-2 147053-90-5
147053-91-6 147053-92-7 147265-26-7 152930-69-3 153091-10-2
RL: USES (Uses)
(color image stabilizer, color **photog.** paper contg.)

IT 124351-77-5
RL: TEM (Technical or engineered material use); USES (Uses)
(magenta **photog.** coupler, color **photog.** paper
contg. macrocyclic compds. and)

L4 ANSWER 16 OF 20 CAPLUS COPYRIGHT 2002 ACS
AN 1993:461678 CAPLUS
DN 119:61678
TI Complexes of lanthanoid salts with macrocyclic ligands. 41.
Photophysical properties of lanthanide dinuclear complexes with
p-tert-butylcalix[8]arene
AU Bunzli, Jean Claude G.; Froidevaux, Pascal; Harrowfield, Jack M.
CS Inst. Chim. Miner. Anal., Univ. Lausanne, Lausanne, CH-1005, Switz.
SO Inorg. Chem. (1993), 32(15), 3306-11
CODEN: INOCAJ; ISSN: 0020-1669
DT Journal
LA English
CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 9, 73
GI



I

- AB The macrocyclic octaphenol p-tert-butylcalix[8]arene (I; LH8) reacted with lanthanide(III) ions in DMF contg. NEt₃ to obtain both homo- and heterodinuclear neutral complexes [(Ln₁xLn_{22-x})LH₂(DMF)₅](DMF)_n (Ln = Nd, Eu, Gd, Tb, Ho, Yb), with n = 4 (.alpha.-phase) or 1.5 (.beta.-phase). ICP-AES detn. of the Ln(III) content shows a clear selectivity of the ligand for ions in the middle of the lanthanide series. Luminescence measurements at 77 K suggest that the 2 lanthanide(III) ions encompassed by the ligand are in very similar environments with pseudo C_{3h} symmetry. Small differences in the crystal-field potential are evidenced between the 2 cryst. phases and when a large ion (e.g. Nd) is encapsulated by the ligand. The presence of a low-lying metal-to-ligand charge-transfer state (MLCT) in the Eu-contg. complexes at .apprx.20,000 cm⁻¹ induces unusual spectroscopic properties. Very large absorption probabilities (.apprx.10⁻⁶) were detd. for the Eu(III) transitions, and the Judd-Ofelt theory for f-f transitions fails to explain the very large value of the .OMEGA.2 parameter (448 .times. 10⁻²⁰ cm²). In DMF soln., an efficient energy transfer from the ligand to Tb(III) occurs and makes the Tb(III) calixarene complex an interesting luminescent label for time-resolved fluoroimmunoassays.
- ST luminescence lanthanide homodinuclear heterodinuclear calixarene complex; macrocycle octaphenol lanthanide homodinuclear heterodinuclear complex; phenol octa macrocycle lanthanide complex; electronic transition lanthanide homodinuclear heterodinuclear calixarene; fluoroimmunoassay time resolved label lanthanide calixarene
- IT Fluorescence
Phosphorescence
(of calixarene in relation to luminescence of its terbium and ytterbium homodinuclear complexes)
- IT Luminescence
(of lanthanide homo- and heterodinuclear calixarene complexes)
- IT Ultraviolet and visible spectra
(of lanthanide homo- and heterodinuclear calixarene complexes, charge transfer in)
- IT Rare earth metals, compounds
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(calixarene complexes, homo- and heterodinuclear, prepn. and photophys. properties of)
- IT Energy level
Energy level splitting
(crystal-field, of europium-lanthanide heterodinuclear calixarene complexes)
- IT Energy level transition
(f-f, of europium calixarene complex, Judd-Ofelt theory in relation to)
- IT Cyclophanes

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (meta-, rare earth metal complexes, homo- and heterodinuclear, prepn.
 and **photophys.** properties of)

IT 148801-64-3 148801-65-4
 RL: PRP (Properties)
 (electronic emission spectra of)

IT 148801-64-3
 RL: PRP (Properties); PRP (Properties)
 (electronic emission spectra of)

IT 111004-80-9
 RL: PRP (Properties)
 (electronic transition and emission spectrum of, in soln. and crystal)

IT **68971-82-4**, p-tert-Butylcalix[8]arene
 RL: PRP (Properties); RCT (Reactant)
 (fluorescence and phosphorescence and reaction of, with lanthanides in
 presence of triethylamine)

IT 148801-53-ODP, solid solns. with rare earth analogs 148801-55-2DP, solid
 solns. with europium and terbium analogs 148801-57-4DP, solid solns.
 with rare earth analogs 148801-59-6DP, solid solns. with europium and
 terbium analogs 148801-61-ODP, solid solns. with terbium analog
 148801-63-2DP, solid solns. with europium analog
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (prepn. and **photophys.** properties of)

L4 ANSWER 17 OF 20 CAPLUS COPYRIGHT 2002 ACS
 AN 1992:215912 CAPLUS
 DN 116:215912
 TI Soluble calixarene derivatives and films prepared from them
 IN Mita, Naoko
 PA NEC Corp., Japan
 SO Eur. Pat. Appl., 9 pp.
 CODEN: EPXXDW
 DT Patent
 LA English
 IC ICM C07C069-12
 ICS C08J005-18
 CC 38-3 (Plastics Fabrication and Uses)
 Section cross-reference(s): 25, 74
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 456497	A2	19911113	EP 1991-304191	19910509
	EP 456497	A3	19930331		
	EP 456497	B1	19950705		
	R: DE, FR, GB				
	JP 04015232	A2	19920120	JP 1990-120310	19900510
	JP 06053819	B4	19940720		
	JP 04128253	A2	19920428	JP 1990-249151	19900919
	JP 07023340	B4	19950315		
	US 5143784	A	19920901	US 1991-694491	19910502
PRAI	JP 1990-120310		19900510		
	JP 1990-249151		19900919		

OS MARPAT 116:215912

AB The title derivs., esp. acetylated methylcalix[n]arenes (n = 4-6), show
 good soly. in org. solvents, form films with good heat resistance and
 hardness, and form neg. patterns upon irradiation and dissolution of unirradiated
 regions with an org. solvent. Refluxing 18.7 g p-methylphenol with 9 g
 paraformaldehyde in xylene in the presence of aq. KOH soln. for 4 h,
 followed by reaction with Ac2O, gave acetylated methylcalix[6]arene which
 was dissolved in PhMe and spin coated on Si to give a hard film.

ST calixarene deriv prepn soly; formaldehyde methylphenol calixarene prepn;
 resist neg calixarene deriv; film calixarene deriv polymer; polymn
 calixarene deriv resist; irradiation polymn calixarene resist

IT Cyclophanes
 RL: PREP (Preparation)
 (meta-, derivs., prepn. of sol., for films and resists)

IT Resists

(~~photo-~~, neg.-working, calixarene derivs. for)

IT Polymerization
(radiochem., of calixarene derivs.)

IT 79942-31-7
RL: USES (Uses)
(methylcalixarene)

IT 60705-62-6P **68971-82-4P** 82452-92-4P 96627-08-6P,
Calix[6]arene 141137-71-5P
RL: PREP (Preparation)
(prepn. of sol., for films and neg. resist)

IT 141137-71-5DP, polymers
RL: PREP (Preparation)
(prepn. of, for films and neg. resist)

IT 98-54-4, p-tert-Butylphenol 106-44-5, p-Methylphenol, reactions
108-95-2, Phenol, reactions 140-66-9, p-tert-Octylphenol
RL: RCT (Reactant)
(reaction of, with formaldehyde, in prepn. of calixarene derivs.)

IT 108-24-7, Acetic anhydride
RL: RCT (Reactant)
(reaction of, with methylcalixarenes)

IT 30525-89-4, Paraformaldehyde
RL: RCT (Reactant)
(reaction of, with phenol derivs., in prepn. of calixarenes)

L4 ANSWER 18 OF 20 CAPLUS COPYRIGHT 2002 ACS
AN 1989:440504 CAPLUS
DN 111:40504
TI Calix[n]arenes - new light stabilizers for polyolefins
AU Seiffarth, K.; Schulz, M.; Goermar, G.; Bachmann, J.
CS VEB Leuna-Werke Walter Ulbricht, Leuna, 4220, Ger. Dem. Rep.
SO Polym. Degrad. Stab. (1989), 24(1), 73-80
CODEN: PDSTDW; ISSN: 0141-3910
DT Journal
LA English
CC 37-6 (Plastics Manufacture and Processing)
AB Cyclic phenol-formaldehyde condensates, the so-called calix[n]arenes (n =
4, 6, 8), are light stabilizers for polyolefins. Their stabilizing power
depends on the ring size and on the substituent in the p-position of the
phenolic units in the ring system. The best stabilizers of this type are
as effective as 2-hydroxybenzophenones. During processing of the polymer,
calix[n]arenes are oxidized by hydroperoxides to form carbonyl contg.
compds., which are the actual light stabilizers. Thus, a cascade
mechanism is suggested for calix[n]arenes as light stabilizers.

ST calixarene light stabilizer polyolefin; antioxidative efficiency
calixarene light stabilizer

IT Light stabilizers
(calixarenes, for LDPE, antioxidative efficiency of, ring substitution
effect on)

IT Antioxidants
(calixarenes, for LDPE, efficiency of, ring substitution effect on)

IT Oxidation, aut-
(of LDPE, effect of calix[n]arenes on induction periods of)

IT Oxidation
(of calix[n]arenes, efficiency as light stabilizers for LDPE in
relation to)

IT Cyclophanes
RL: USES (Uses)
(meta-, light stabilizers, for LDPE, antioxidative efficiency of, ring
substitution effect on)

IT Polymer degradation
(oxidative, **photochem.**, of LDPE, effect of calix[n]arenes on)

IT 119-64-2, Tetralin
RL: RCT (Reactant)
(initiated oxidn. of, in presence of calix[n]arenes as light
stabilizers)

IT 42607-92-1 53255-02-0 60705-62-6 **68971-82-4** 68971-85-7
74568-07-3 77769-14-3 78092-53-2 82452-92-4 82452-93-5

93503-77-6 121612-86-0 121612-87-1
 RL: USES (Uses)
 (light stabilizers, for LDPE, antioxidative efficiency of)
 IT 9002-88-4, LDPE
 RL: USES (Uses)
 (low-d., light stabilizers for Mirathen A1 21 FA, calix[n]arenes as,
 antioxidative efficiency of)
 IT 75-91-2, tert-Butylhydroperoxide
 RL: USES (Uses)
 (oxidn. of calix[n]arenes in presence of, antioxidative efficiency as
 light stabilizers for LDPE in relation to)

L4 ANSWER 19 OF 20 CAPLUS COPYRIGHT 2002 ACS
 AN 1989:76754 CAPLUS
 DN 110:76754
 TI Phenolic calixarenes as **photostabilizers** of polymers and organic
 materials
 IN Goermar, Gerhard; Seiffarth, Klaus; Bachmann, Joerg; Schulz, Manfred;
 Raedler, Klaus Peter
 PA VEB Leuna-Werke "Walter Ulbricht", Ger. Dem. Rep.
 SO Ger. (East), 5 pp.
 CODEN: GEXXA8
 DT Patent
 LA German
 IC ICM C08K005-15
 CC 37-6 (Plastics Manufacture and Processing)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DD 254739	A1	19880309	DD 1986-296981	19861203
OS	MARPAT 110:76754				
AB	Phenolic calixarenes (d.p. 3-8), optionally bearing hydrocarbyl groups para to the OH group, treated with H2O2, hydroperoxides, or peracids, are photostabilizers for polymers. Refluxing 1 g tetra-4-tert-butyltetra-1-hydroxycalix(4)arene and 5 g tert-BuOOH in 30 mL PhCl for 24 h gave 490 mg oxidn. product (I) whose IR spectrum showed CO and OH peaks. Low-d. polyethylene contg. 0.3% I required 1150 h Xenotest exposure for the extinction coeff. of the CO band (1720 cm ⁻¹) of the IR spectrum to reach 0.1; vs. 450 without I.				
ST	antioxidant light stabilizer polymer; calixarene oxidized stabilizer polymer; polyethylene antioxidant calixarene oxidized; peroxide oxidn calixarene; hydroperoxide oxidn calixarene; peracid oxidn calixarene				
IT	Antioxidants Light stabilizers (oxidized phenolic calixarenes, for polymers)				
IT	Hydroperoxides RL: RCT (Reactant) (oxidn. by, of phenolic calixarenes for photooxidn. stabilizers for polymers)				
IT	Polyamides, uses and miscellaneous Polyesters, uses and miscellaneous Polymers, uses and miscellaneous RL: USES (Uses) (photooxidn. stabilizers for, oxidized phenolic calixarenes as)				
IT	Cyclophanes RL: USES (Uses) (meta-, hydroxy, oxidized, photooxidn. stabilizers for polymers)				
IT	Alkenes, polymers RL: USES (Uses) (polymers, photooxidn. stabilizers for, oxidized phenolic calixarenes as)				
IT	74-85-1D, Ethylene, polymers with .alpha.-olefins RL: USES (Uses) (linear low-d., photooxidn. stabilizers for, oxidized phenolic calixarenes as)				

IT 75-91-2, tert-Butylhydroperoxide 7722-84-1, Hydrogen peroxide, reactions
 RL: RCT (Reactant)
 (oxidn. by, of phenolic calixarenes for **photooxidn.**
 stabilizers for polymers)

IT 9002-88-4 9003-56-9
 RL: USES (Uses)
 (**photooxidn.** stabilizers for, oxidized phenolic calixarenes
 as)

IT 60705-62-6D, oxidized **68971-82-4D**, oxidized 78092-53-2D,
 oxidized
 RL: USES (Uses)
 (**photooxidn.** stabilizers, for polymers)

L4 ANSWER 20 OF 20 CAPLUS COPYRIGHT 2002 ACS
 AN 1985:505708 CAPLUS
 DN 103:105708
 TI Preparation of 4-tert-butyloxocalix[n]arenes and their properties as
 UV-absorbers
 AU Ninagawa, Akira; Cho, Kazuhiro; Matsuda, Haruo
 CS Fac. Eng., Osaka Univ., Suita, 565, Japan
 SO Makromol. Chem. (1985), 186(7), 1379-85
 CODEN: MACEAK; ISSN: 0025-116X
 DT Journal
 LA English
 CC 37-6 (Plastics Manufacture and Processing)
 Section cross-reference(s): 25
 GI For diagram(s), see printed CA Issue.

AB The calixarenes I (x = 3, y = 1) (II) [98085-82-6], I (x = 5, y = 1)
 (III) [98085-83-7], and octa-tert-butyl-octahydroxy-trioxocalix[8]arene
 (IV) were prepd. from 4-tert-butylcalix[4]-, [6]- and [8]-arenes from
 4-tert-butylphenol. 5,5'-Di-tert-butyl-2,2'-dihydroxybenzophenone (V)
 [25446-98-4] was prepd. via 5,5'-di-tert-butyl-2,2'-dimethoxybenzophenone
 (VI) [98085-85-9] from bis(5-tert-butyl-2-methoxyphenyl)methane
 [98085-84-8]. 1,4-Dioxane solns. of II, III, IV, V, and VI were
 irradiated. The **photostability** of III and IV in dioxane was
 better than that of II, V, or VI. A PVC [9002-86-2] film contg. 0.06
 mmol III/g was most stable to **photooxidn.**

ST PVC light stabilizer calixarene; benzophenone dibutyldihydroxy light
 stabilizer

IT Light stabilizers
 (oxocalixarenes, prepn. and activity of)

IT 25446-98-4P **68971-82-4DP**, oxidized 98085-82-6P 98085-83-7P
 98085-85-9P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (light stabilizer, prepn. and properties of)

IT 9002-86-2
 RL: USES (Uses)
 (light stabilizers for, calixarenes as)

IT 60705-62-6 78092-53-2 98085-84-8
 RL: RCT (Reactant)
 (oxidn. of)

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=> s 12
L6 18 L2

=> d pn,ab, kwic 1-18

L6 ANSWER 1 OF 18 USPATFULL
PI US 5952526 19990914
AB Para sulfonated calixarenes are obtained in a one-step reaction directly from para blocked calixarenes by treating same with a sulfonating agent, such as concentrated sulfuric acid, to perform an ipso-electrophilic substitution.
IT 60705-62-6 **68971-82-4**
(prepn. of sulfonated calixarenes)

L6 ANSWER 2 OF 18 USPATFULL
PI US 5952145 19990914
AB Charge control agent and toner for developing electrostatic images comprising such a charge control agent whose active ingredient is a calix (n) arene compound of formula I: ##STR1## wherein x+y=n; x and y each is an integer of 1 or more; n is an integer of 4-8; the x repeat units and y repeat units can be arranged in any order; R.sup.1 and R.sup.2 each is H, C.sub.1-12 alkyl, C.sub.2-12 alkenyl, C.sub.7-12 aralkyl, phenyl, C.sub.4-8 cycloalkyl, halogen, nitro, amino, alkyl- or phenyl-substituted amino, --Si(CH.sub.3).sub.3, or --SO.sub.3 H; and of the n R radicals in the --OR groups, 1 to (n-1) are H, with the remaining (n-1) to 1 being alkyl, alkenyl, phenyl, aralkyl, cycloalkyl, --COR.sup.3 [wherein R.sup.3 is H, alkyl, alkenyl, phenyl, aralkyl, or cycloalkyl], --Si(CH.sub.3).sub.3, --(CH.sub.2).sub.m COOR.sup.4 [wherein R.sup.4 is H or lower alkyl and m is an integer of 1-3], --(CH.sub.2 CH.sub.2 O).sub.r H [wherein r is an integer of 1-10], or ##STR2##
IT 74-88-4, Methyl iodide, reactions 98-54-4, p-tert-Butylphenol 100-39-0, Benzyl bromide 106-89-8, Epichlorohydrin, reactions 106-95-6, Allyl bromide, reactions 27193-28-8, tert-Octylphenol 30525-89-4, Paraformaldehyde **68971-82-4**, p-tert-Butylcalix[8]arene
(reaction in prepn. of calix[n]arene charge-controlling agents for electrostatog. toners)

L6 ANSWER 3 OF 18 USPATFULL
PI US 5844056 19981201
AB The synthesis and characterization of novel linear polymers and multi-arm star polymers comprising polyisobutylene arms connected to a well-defined calixarene core are described. The polymers are directly telechelic. They synthesis has been achieved using the "core first" method wherein multifunctional calix[n]arene (where n=4 to 16) derivatives or their monofunctional analogues are used as initiators which, in conjunction with certain Freidel-Crafts acids as co-initiators, induce the living polymerization of isobutylene or a similar carbocationic polymerizable monomer. Novel initiators suitable for inducing the polymerization are also described.
IT **68971-82-4P** 82452-93-5P 106750-74-7P 106750-79-2P
(star polymers having multiple polyisobutylene arms emanating from a calixarene core and the synthesis thereof)

L6 ANSWER 4 OF 18 USPATFULL
PI US 5804664 19980908
AB The synthesis and characterization of novel linear polymers and multi-arm star polymers comprising polyisobutylene arms connected to a well-defined calixarene core are described. The synthesis has been achieved using the "core first" method wherein multifunctional

calix[n]arene (where n=4 to 16) derivatives or their monofunctional analogues are used as initiators which, in conjunction with certain Freidel-Crafts acids as co-initiators, induce the living polymerization of isobutylene or a similar carbocationic polymerizable monomer to form star polymers or block copolymers. Novel initiators suitable for inducing the polymerization are also described.

IT 68971-82-4P 82452-93-5P 106750-74-7P 106750-79-2P

(star polymers having multiple polyisobutylene arms emanating from a calixarene core and the synthesis thereof)

L6 ANSWER 5 OF 18 USPATFULL

PI US 5780403 19980714

AB A compound comprised of a moiety derived from an organic nitrogen-containing base and a calixarene moiety in which the hydroxyl substituent (or substituents) is (are) substituted by oligoether chains. Typically, the compounds are complexes of the formula (I): ##STR1## wherein Y is a divalent bridging group; R.sup.3 is hydrogen, hydrocarbyl or a hetero-substituted hydrocarbyl group;

either (1) R.sup.1 is OR.sup.5 and R.sup.2 and R.sup.4 are independently either hydrogen, hydrocarbyl or hetero-substituted hydrocarbyl, or (2) R.sup.1 is either hydrogen, hydrocarbyl or hetero-substituted hydrocarbyl, and either both R.sup.2 and R.sup.4 are OR.sup.5 or one of R.sup.2 and R.sup.4 is OR.sup.5 and the other is --OH, R.sup.5 being --(Z).sub.n R.sup.6 in which Z is at least one alkylene oxide group, R.sup.6 is hydrocarbyl or hetero-substituted hydrocarbyl and n is an integer in the range from 1 to 10; x is an integer in the range from 3 to 12; and X is a moiety derived from an organic nitrogen-containing base.

IT 68971-82-4P, p-tert-Butylcalix[8]arene

(ash-free detergents, their prepn., and use in lubricating oil compns.)

L6 ANSWER 6 OF 18 USPATFULL

PI US 5767034 19980616

AB An olefin polymerization catalyst includes a halogen-containing magnesium compound; a titanium compound; and an additive selected from the group consisting of (a) a mixture of an aluminum alkoxide compound and polydimethylsiloxane, (b) an aluminosiloxane, (c) the reaction product of an aluminum alkyl and a calixarene, (d) the reaction product of an aluminum alkyl and a cyclodextrin, and mixtures of (a)-(d).

IT 75-24-1DP, Trimethylaluminum, reaction products with calixarene or cyclodextrin 555-31-7DP, Aluminum triisopropoxide, reaction products with trimethylsilyl acetate 2754-27-0DP, Trimethylsilyl acetate, reaction products with aluminum triisopropoxide 7585-39-9DP, .beta.-Cyclodextrin, reaction products with trimethylaluminum 68971-82-4DP, 4-tert-Butylcalix[8]arene, reaction products with trimethylaluminum

(olefin polymn. catalysts)

L6 ANSWER 7 OF 18 USPATFULL

PI US 5711927 19980127

AB This invention relates to a method of purifying fullerene by recrystallization of a fullerene-complexing agent complex and to a fullerene-complexing agent complex.

IT 68971-82-4, p-tert-Butyl-calix[8]arene 78092-53-2,
p-tert-Butyl-calix[6]arene

(complexing agent; process for purifying C60-fullerenes and mixts. of C60-fullerenes and higher fullerenes with a complexing agent, esp. resorcinol-derived calixarene)

L6 ANSWER 8 OF 18 USPATFULL

PI US 5622687 19970422

AB Calixarene conjugates useful for imaging, particularly magnetic resonance imaging (MRI) and computed tomography (CT) are described. Said calixarene conjugates comprise (i) a calixarene backbone, and (ii) at least one imaging moiety linked thereto, and may be of the formula: ##STR1## wherein at least one of the R.sup.1 and R.sup.4 substituents

comprises an imaging moiety, the remaining R.sup.1 and R.sup.4 substituents are spectator groups, J is an ortho-linker, and n is an integer from 4 to 8. Imaging moieties useful for CT imaging include those comprising two or more iodine atoms. Imaging moieties useful for MRI include (i) organic moieties comprising four or more fluorine atoms; (ii) nitroxyl spin labeled moieties; and (iii) metal chelate moieties.

IT 68971-82-4P 82452-93-5P 105190-41-8P 106750-74-7P
128936-82-3P 128936-84-5P
(prepn. and reaction; calixarene conjugates for MRI and CT diagnostic imaging agents, and prepn. thereof)

L6 ANSWER 9 OF 18 USPATFULL
PI US 5489612 19960206
AB Calixarene derivatives, their synthesis and use as chloride channel blockers are described. Preferred calixarene derivatives are of the formula: ##STR1## wherein R is an acidic group or salt thereof, such as SO.sub.3 X or R.sup.1 SO.sub.3 X where X is H or Na, and R.sup.1 is ##STR2## where m=1-2, and R.sup.3 and R.sup.4 the same or different is each H or a C.sub.1-4 alkyl, or a nitrogen-containing group of the formula ##STR3## or A, wherein R.sup.5 is a C.sub.1-4 alkyl, R.sup.6 is a C.sub.1-4 alkyl and A is ##STR4## where R.sup.7 and R.sup.8, the same or different each is H or a C.sub.1-4 alkyl, and R.sup.9 and R.sup.10, the same or different, each is H or a C.sub.1-4 alkyl; R' is H or a C.sub.1-4 alkyl; and n is an integer of 4-8, preferably 4, 6 or 8.

IT 96107-96-9 105190-41-8 110242-20-1
(acidic calixarene prepn. for chloride-channel blockers)

L6 ANSWER 10 OF 18 USPATFULL
PI US 5482520 19960109
AB The present invention provides a chemical composition comprising a t-butyl calix[8]arene encapsulated cyanuric acid derivatized with at least one C.sub.4 -C.sub.50 n-alkyl halide, n-alkaryl halide, aryl halide or polyoxyalkylene halide.

IT 68971-82-4P
(derivatized t-Bu calixarene encapsulated cyanuric acid to nitrogen oxides redn. in diesel combustion)

IT 108-80-5, Cyanuric acid 68971-82-4D, derivs.
(derivatized t-Bu calixarene encapsulated cyanuric acid to nitrogen oxides redn. in diesel combustion)

L6 ANSWER 11 OF 18 USPATFULL
PI US 5415909 19950516
AB The interlayer film comprises 100 weight parts of ethylene-vinyl acetate copolymer or ethylene-alkyl(meth)acrylate copolymer, 0.01 to 4 weight parts of a transparency improvement agent, and 0.01 to 4 weight parts of a silane coupling agent which contains one or more types of groups selected from amino groups, glycidyl groups and mercapto groups. The laminated glass comprises said interlayer film laminated between 2 transparent plates selected from glass plates and synthetic resin plates.

IT 19046-64-1 19342-55-3 32647-68-0, Tribenzylidenesorbitol 54365-47-8
60705-62-6, 4-tert-Butyl calix[4]arene 68971-82-4, 4-tert-Butyl calix[8]arene 78092-53-2, 4-tert-Butyl calix[6]arene 87826-41-3
88608-79-1 161471-88-1
(transparency improver; room-temp. storage-stable interlayer film for manuf. of laminated glass)

L6 ANSWER 12 OF 18 USPATFULL
PI US 5409959 19950425
AB A method of inhibiting thrombus formation in a mammalian subject. The method involves administering to the subject a therapeutically effective dose of a calix(n)arene compound derivatized, at its ring positions meta to the bridge attachments to the ring, with polar substituents having terminal sulfonate groups, including esters and amides which are cleavable in vivo.

IT 98-67-9, p-Hydroxybenzenesulfonic acid 100-97-0,
Hexamethylenetetramine, reactions 129-96-4, Disodium chromotropate

148-25-4, Chromotropic acid 281-54-9, Calix(4)arene 298-12-4,
Glyoxylic acid 612-14-6, 1,2-Benzenedimethanol 1120-71-4,
Propane-1,3-sultone 2203-14-7 21500-57-2 24566-90-3 60705-62-6,
4-tert-Butylcalix(4)arene **105190-41-8** 109894-43-1
(antithrombotic calix(n)arene derivs.)

L6 ANSWER 13 OF 18 USPATFULL

PI US 5350657 19940927

AB In toner for developing an electrostatic latent image, at least an organic charge-controlling agent having a BET specific surface area of 15 to 80 m.sup.2 /g and inorganic fine particles having a BET specific surface area of 10 to 150 m.sup.2 /g are fixed and/or film-formed on the surface of core particles mainly composed of thermoplastic resin.

IT **68971-82-4** 89107-32-4, Bontron S 34 150569-08-7
(electrophotog. developer toner grain coated with, charge-controlling agent)

L6 ANSWER 14 OF 18 USPATFULL

PI US 5205946 19930427

AB Non-sulphurized overbased metal salts of sulphur-free calixarenes having a substituent hydroxyl group or groups available for reaction with metal base and their preparation are claimed. The salts are useful as additives to lubricating oils by reason of their acids neutralization capability, their detergent and their antioxidant properties.

IT **68971-82-4D**, overbased metal salts 78092-53-2D, overbased metal salts 93503-76-5D, overbased metal salts 93503-77-6D, overbased metal salts 102622-21-9D, overbased metal salts 102622-22-0D, overbased metal salts 102622-23-1D, overbased metal salts 138948-67-1D, overbased metal salts
(detergents, for lubricating oils)

L6 ANSWER 15 OF 18 USPATFULL

PI US 5143784 19920901

AB A novel calixarene derivative, viz. acetylated methyl-calix[n]arene (n is from 4 to 8), exhibits high solubilities in various organic solvents. A film of this compound can easily be formed by a conventional solution coating method such as spin coating, and the obtained film is hard and heat-resistant. A pattern of negative type can be formed in the obtained film by selectively irradiating the film with a high-energy ray such as ion beam, electron beam or X-ray to polymerize and insolubilize the irradiated regions and then removing the unirradiated region by dissolution in an organic solvent.

IT 60705-62-6P **68971-82-4P** 82452-92-4P 96627-08-6P,
Calix[6]arene 141137-71-5P
(prepn. of sol., for films and neg. resist)

L6 ANSWER 16 OF 18 USPATFULL

PI US 5114601 19920519

AB Non-sulphurized overbased metal salts of sulphur-free calixarenes having a substituent hydroxyl group or groups available for reaction with metal base are claimed. The salts are useful as additives to lubricating oils by reason of their acids neutralization capability, their detergent and their antioxidant properties.

IT **68971-82-4D**, overbased metal salts 78092-53-2D, overbased metal salts 93503-76-5D, overbased metal salts 93503-77-6D, overbased metal salts 102622-21-9D, overbased metal salts 102622-22-0D, overbased metal salts 102622-23-1D, overbased metal salts 138948-67-1D, overbased metal salts
(detergents, for lubricating oils)

L6 ANSWER 17 OF 18 USPATFULL

PI US 5049467 19910917

AB A toner for use in the development of electrostatic latent images containing at least one calix (n) arene compound. The compound is almost colorless, dispersible in the toner resin, and compatible with the toner resin, and does not contain metals, so that the toner obtained has stability against environmental changes and excellent stability on

storage. The toner can be used to form images that are clear, the fine lines of which have good reproducibility.

IT 68971-82-4 78092-53-2 93503-76-5 131957-03-4
(as charge controller for electrophotog. toner)

L6 ANSWER 18 OF 18 USPATFULL
PI US 4477377 19841016
AB A process of recovering cesium ions from mixtures of ions containing them and other ions, e.g., a solution of nuclear waste materials, which comprises establishing a separate source phase containing such a mixture of ions, establishing a separate recipient phase, establishing a liquid membrane phase in interfacial contact with said source and recipient phases, said membrane phase containing a ligand, preferably a selected calixarene as depicted in the drawing, maintaining said interfacial contact for a period of time long enough to transport by said ligand a substantial portion of the cesium ion from the source phase to the recipient phase, and recovering the cesium ion from the recipient phase. The separation of the source and recipient phases may be by the membrane phase only, e.g., where these aqueous phases are emulsified as dispersed phases in a continuous membrane phase, or may include a physical barrier as well, e.g., an open-top outer container with an inner open-ended container of smaller cross-section mounted in the outer container with its open bottom end spaced from and above the closed bottom of the outer container so that the membrane phase may fill the outer container to a level above the bottom of the inner container and have floating on its upper surface a source phase and a recipient phase separated by the wall of the inner container as a physical barrier. A preferred solvent for the ligand is a mixture of methylene chloride and carbon tetrachloride.

IT 60705-62-6 68971-82-4 78092-53-2
(fission product recovery with membrane of)

=> dhis
DHIS IS NOT A RECOGNIZED COMMAND
The previous command name entered was not recognized by the system.
For a list of commands available to you in the current file, enter "HELP COMMANDS" at an arrow prompt (=>).

=> d his

(FILE 'HOME' ENTERED AT 12:53:31 ON 23 JAN 2002)

FILE 'REGISTRY' ENTERED AT 12:53:36 ON 23 JAN 2002

L1 69 S CALIX AND HYDROXY
L2 13 S L1 AND 8

FILE 'CAPLUS' ENTERED AT 12:56:07 ON 23 JAN 2002

L3 302 S L2
L4 20 S L3 AND PHOTO?
L5 1339 S L1

FILE 'USPATFULL, USPAT2' ENTERED AT 12:58:16 ON 23 JAN 2002

L6 18 S L2

=> log y

COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	32.44	120.83
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE	TOTAL
	ENTRY	SESSION
CA SUBSCRIBER PRICE	0.00	-12.39

STN INTERNATIONAL LOGOFF AT 12:59:10 ON 23 JAN 2002

Trying 3106016892...Open

Welcome to STN International! Enter x:x

LOGINID:sssptaul56cxh

PASSWORD:

TERMINAL (ENTER 1, 2, 3, OR ?):2

* * * * * Welcome to STN International * * * * *

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NEWS 2 Sep 17 IMSworld Pharmaceutical Company Directory name change
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Index
NEWS 4 Oct 09 Number of Derwent World Patents Index updates increased
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NEWS 11 Nov 29 COPPERLIT now available on STN
NEWS 12 Nov 29 DWPI revisions to NTIS and US Provisional Numbers
NEWS 13 Nov 30 Files VETU and VETB to have open access
NEWS 14 Dec 10 WPINDEX/WPIDS/WPIX New and Revised Manual Codes for 2002
NEWS 15 Dec 10 DGENE BLAST Homology Search
NEWS 16 Dec 17 WELDASEARCH now available on STN
NEWS 17 Dec 17 STANDARDS now available on STN
NEWS 18 Dec 17 New fields for DPCI
NEWS 19 Dec 19 CAS Roles modified
NEWS 20 Dec 19 1907-1946 data and page images added to CA and CPlus

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=> file reg

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	0.15	0.15

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DICTIONARY FILE UPDATES: 22 JAN 2002 HIGHEST RN 385365-97-9

TSCA INFORMATION NOW CURRENT THROUGH July 7, 2001

Please note that search-term pricing does apply when
conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Calculated physical property data is now available. See HELP PROPERTIES
for more information. See STNote 27, Searching Properties in the CAS
Registry File, for complete details:
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

=> s calix and hydroxy not 8

240 CALIX
2505693 HYDROXY
1812692 8

L1 56 CALIX AND HYDROXY NOT 8

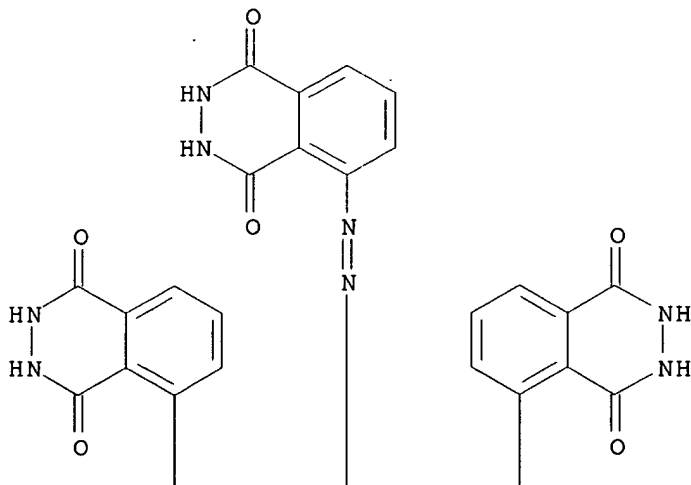
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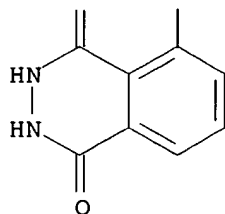
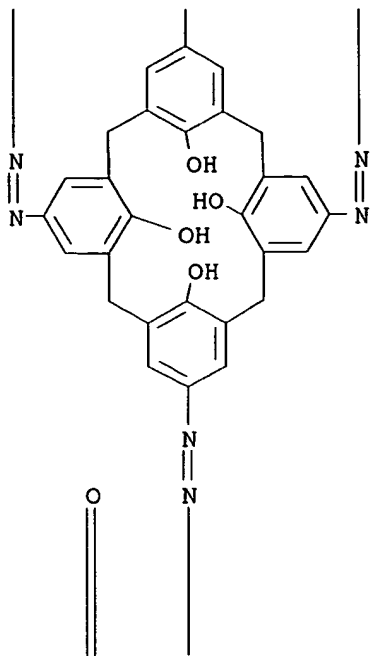
L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS

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1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-5,11,17,23-
tetrayl)tetrakis(azo)]tetrakis[2,3-dihydro- (9CI)

MF C60 H40 N16 O12

PAGE 1-A



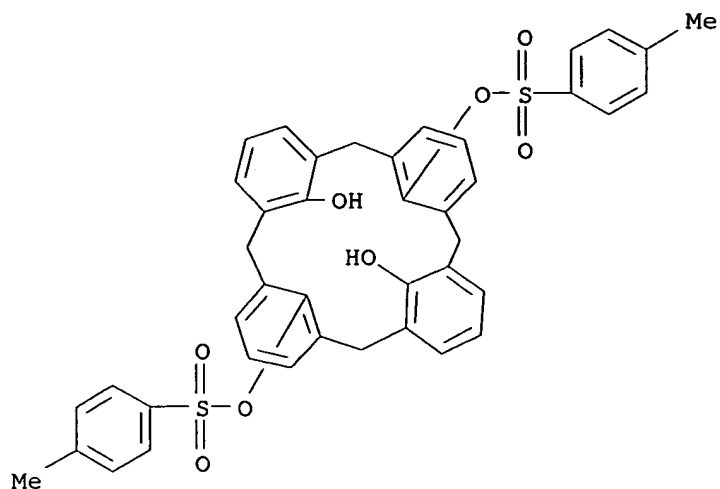


HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):5

L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS

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MF C42 H36 O8 S2



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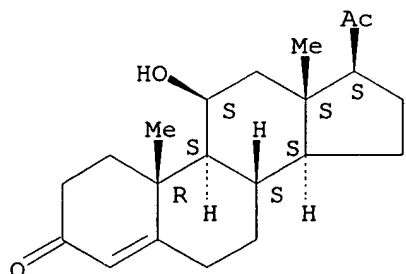
L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
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5,11,17,23,29,35-hexakis(1,1-dimethylethyl)heptacyclo[31.3.1.13,7.19,13.11
5,19.121,25.127,31]dotetraconta-1(37),3,5,7(42),9,11,13(41),15,17,19(40),2
1,23,25(39),27,29,31(38),33,35-octadecaene-37,38,39,40,41,42-hexol (1:1
(9CI)
 MF C66 H84 O6 . C21 H30 O3

CM 1

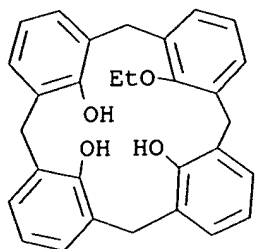
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CM 2

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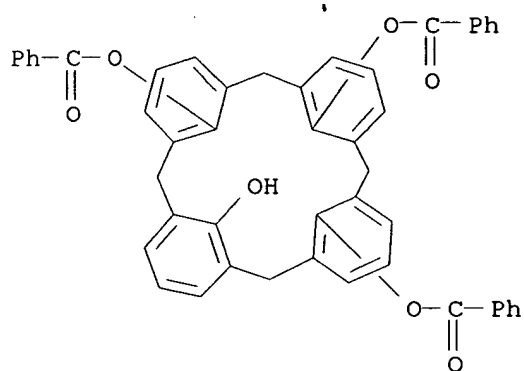


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5,17,19(26),21,23-dodecaene-25,26,27-triol, 28-ethoxy- (9CI)
 MF C30 H28 O4



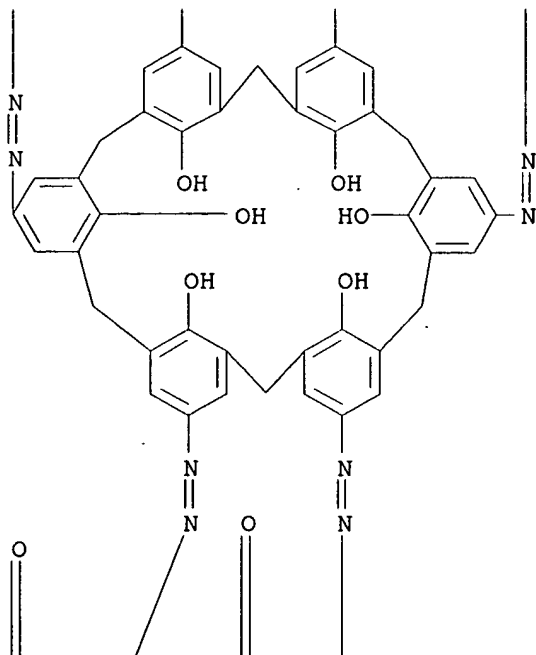
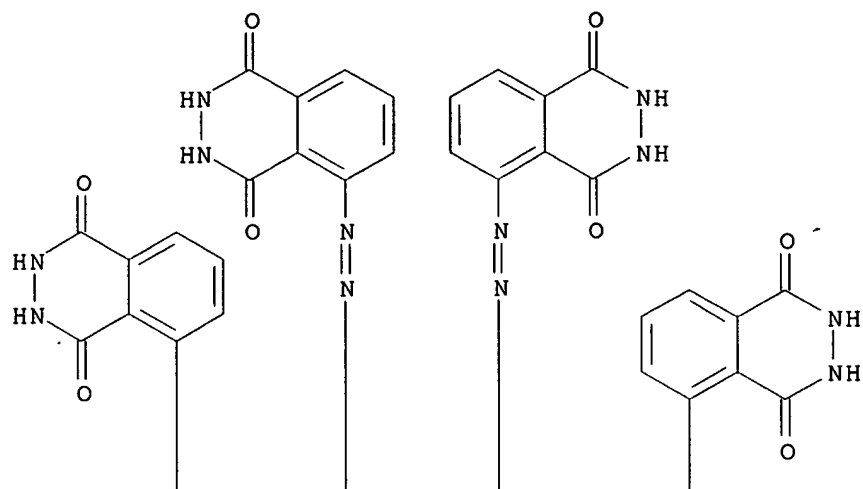
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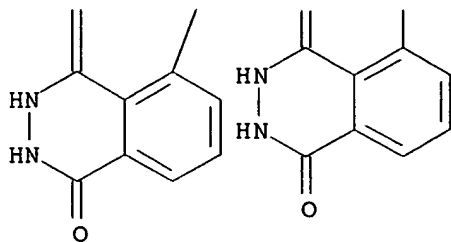
L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
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 MF C49 H36 O7



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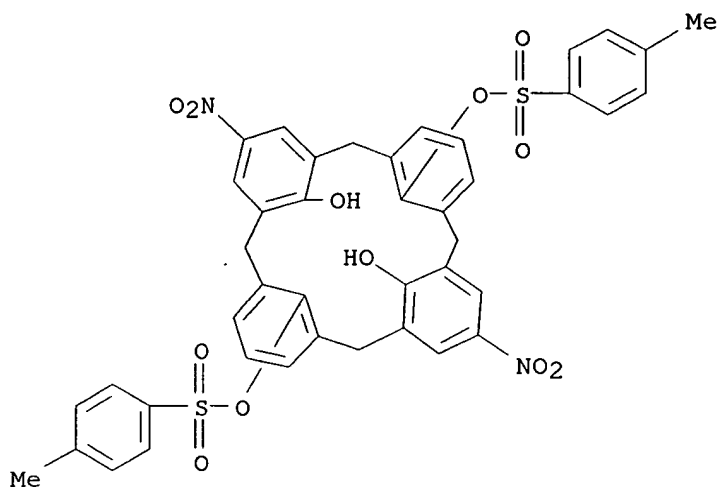
L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
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 MF C90 H60 N24 O18





HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):50

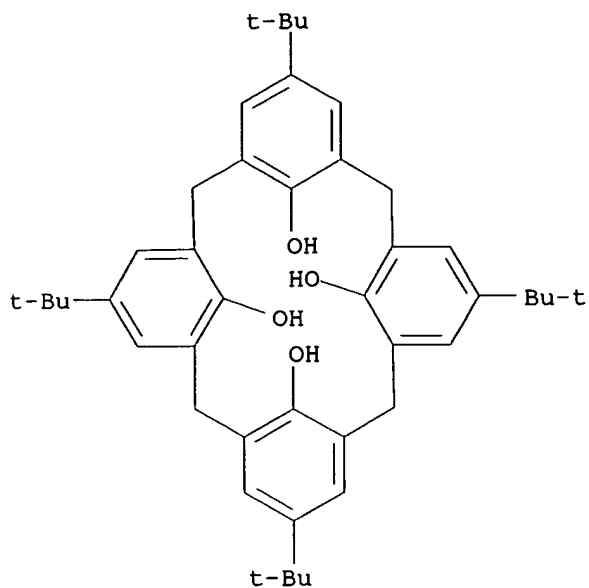
L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
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 MF C42 H34 N2 O12 S2



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

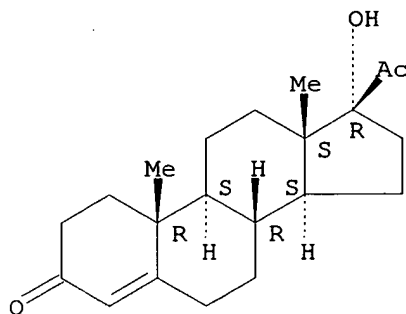
L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
 IN **Pregn-4-ene-3,20-dione, 17-hydroxy-, compd. with 5,11,17,23-tetrakis(1,1-dimethylethyl)pentacyclo[19.3.1.13,7.19,13.115,19]octacosa-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-25,26,27,28-tetrol (1:1) (9CI)**
 MF C44 H56 O4 . C21 H30 O3

CM 1

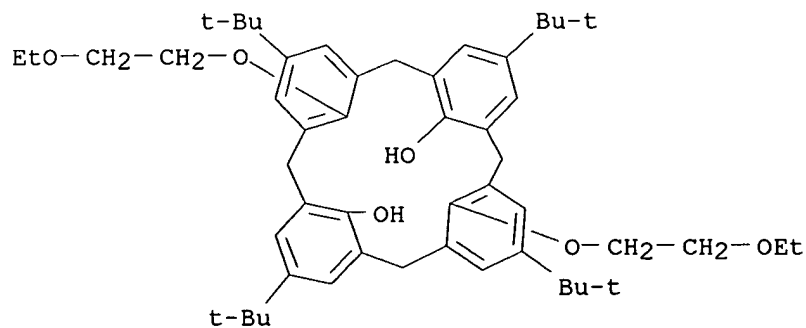


CM 2

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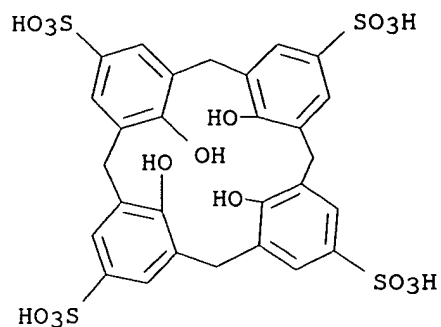


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 MF C52 H72 O6



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

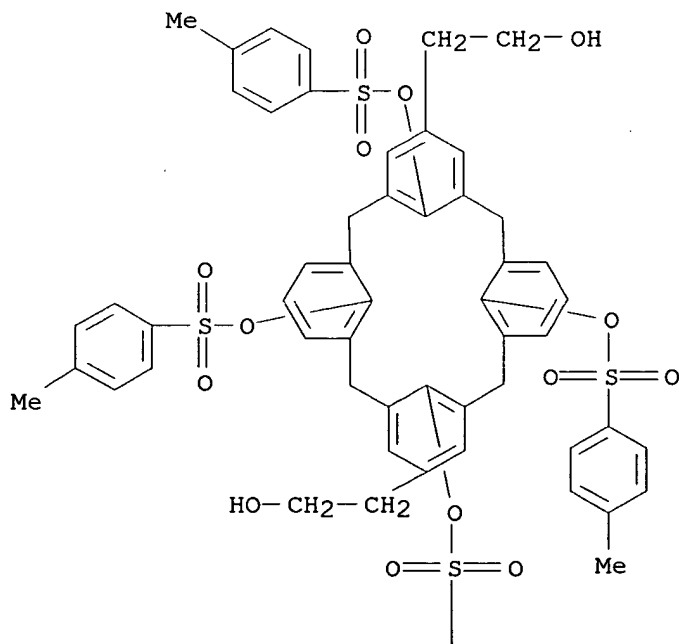
L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
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1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-5,11,17,23-
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 MF C28 H24 O16 S4 . 4 Na
 CI COM

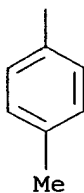


● 4 Na

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1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-25,26,27,28-
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methylbenzenesulfonate) (9CI)
 MF C60 H56 O14 S4

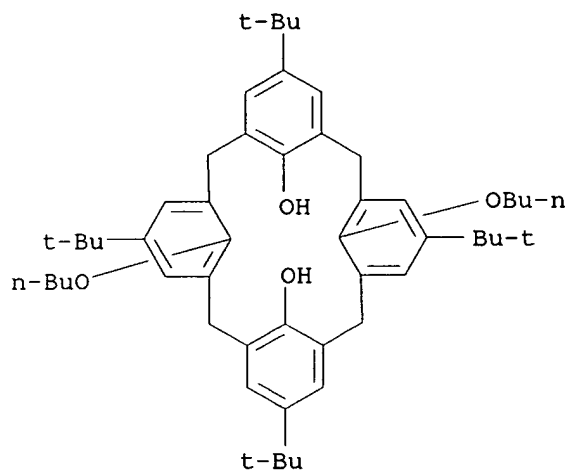
PAGE 1-A





PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
 IN Pentacyclo[19.3.1.13,7.19,13.115,19]octacos-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-25,27-diol, 26,28-dibutoxy-5,11,17,23-tetrakis(1,1-dimethylethyl)- (9CI)
 MF C52 H72 O4
 CI COM



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

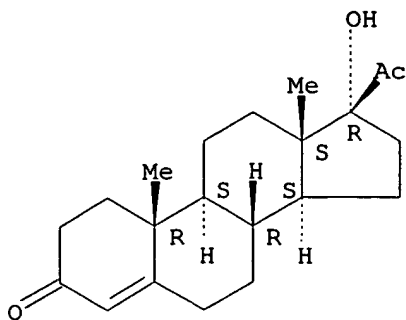
L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
 IN **Pregn-4-ene-3,20-dione, 17-hydroxy-, compd. with 5,11,17,23,29,35-hexakis(1,1-dimethylethyl)heptacyclo[31.3.1.13,7.19,13.115,19.121,25.127,31]dotetraconta-1(37),3,5,7(42),9,11,13(41),15,17,19(40),21,23,25(39),27,29,31(38),33,35-octadecaene-37,38,39,40,41,42-hexol (1:1) (9CI)**
 MF C66 H84 O6 . C21 H30 O3

CM 1

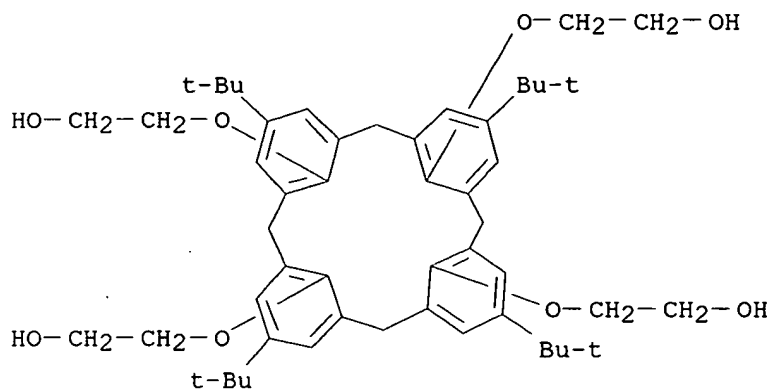
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

Absolute stereochemistry.

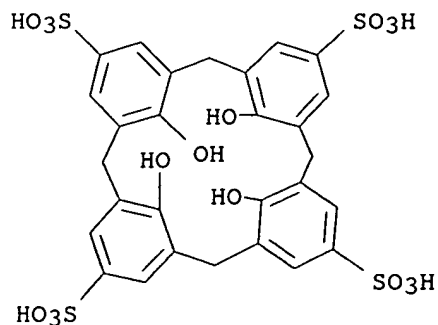


L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
 IN Ethanol, 2;2',2'',2'''-[5,11,17,23-tetrakis(1,1-dimethylethyl)pentacyclo[19.3.1.13,7.19,13.115,19]octacos-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-25,26,27,28-tetrayl]tetrakis(oxy)]tetrakis- (9CI)
 MF C52 H72 O8



****PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT****

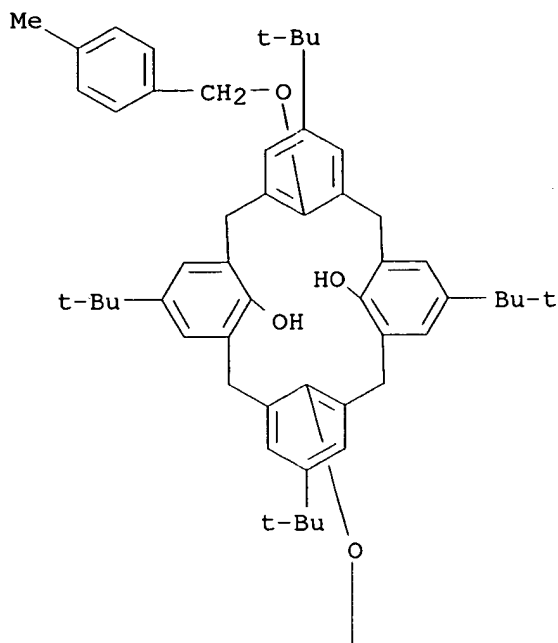
L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
 IN **Pentacyclo[19.3.1.13,7.19,13.115,19]octacos-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-5,11,17,23-tetrasulfonic acid, 25,26,27,28-tetrahydroxy- (9CI)**
 MF C28 H24 O16 S4
 CI COM



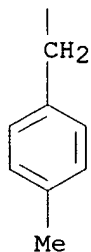
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
IN Pentacyclo[19.3.1.13,7.19,13.115,19]octacos-1(25),3,5,7(28),9,11,13(27),1
5,17,19(26),21,23-dodecaene-25,27-diol, 5,11,17,23-tetrakis(1,1-
dimethylethyl)-26,28-bis[(4-methylphenyl)methoxy]- (9CI)
MF C60 H72 O4

PAGE 1-A

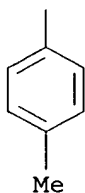
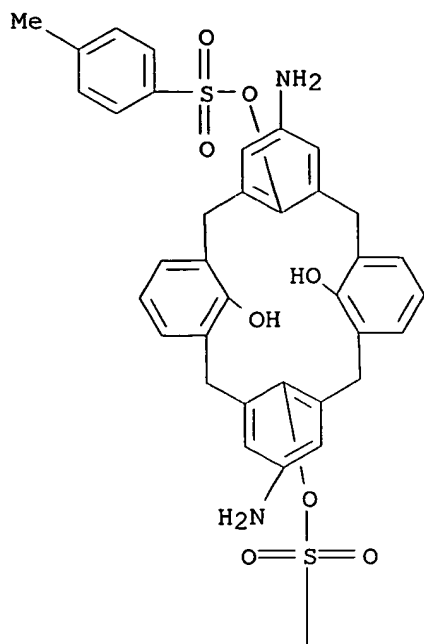


PAGE 2-A



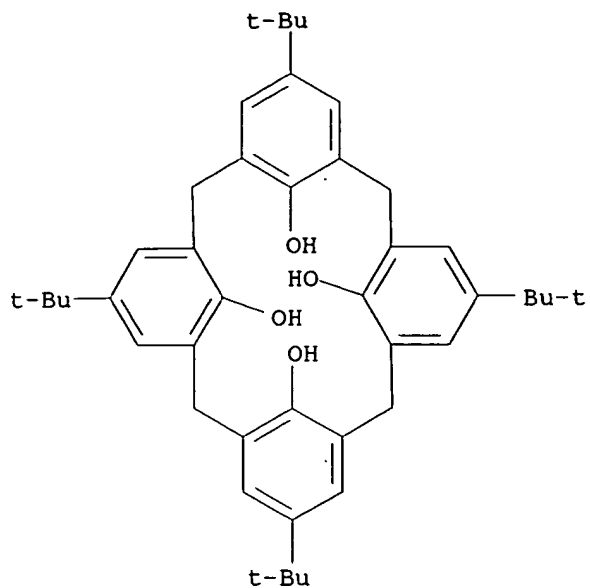
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
IN Pentacyclo[19.3.1.13,7.19,13.115,19]octacos-1(25),3,5,7(28),9,11,13(27),1
5,17,19(26),21,23-dodecaene-25,26,27,28-tetrol, 5,17-diamino-,
26,28-bis(4-methylbenzenesulfonate), dihydrochloride (9CI)
MF C42 H38 N2 O8 S2 . 2 Cl H



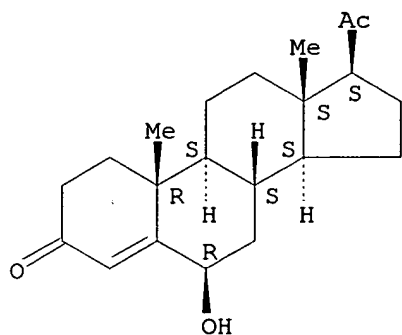
● 2 HCl

L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
 IN **Pregn-4-ene-3,20-dione, 6-hydroxy-, (6.beta.)-, compd. with**
5,11,17,23-tetrakis(1,1-dimethylethyl)pentacyclo[19.3.1.13,7.19,13.115,19]
octacos-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-
25,26,27,28-tetrol (1:1) (9CI)
 MF C44 H56 O4 . C21 H30 O3
 CM 1

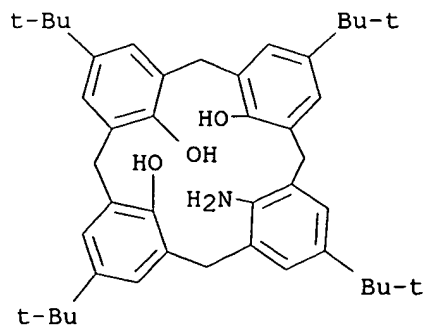


CM 2

Absolute stereochemistry.

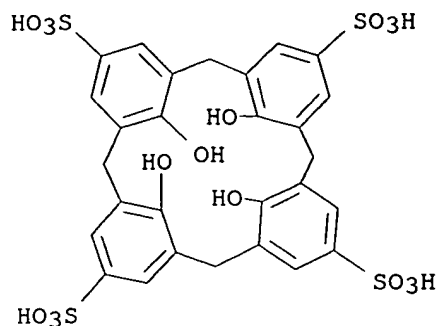


L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
 IN Pentacyclo[19.3.1.13,7.19,13.115,19]octacos-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-25,26,27-triol, 28-amino-5,11,17,23-tetrakis(1,1-dimethylethyl)-, stereoisomer (9CI)
 MF C44 H57 N O3



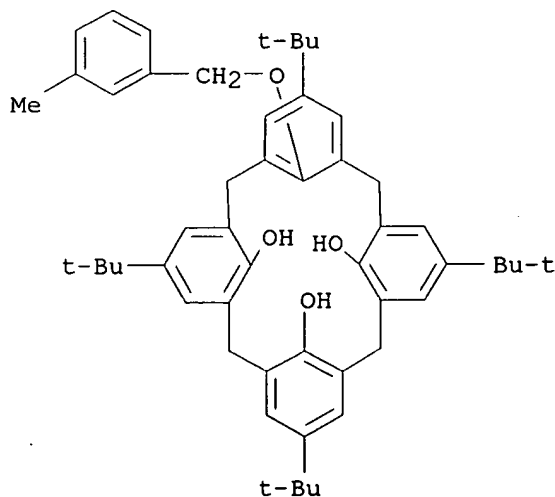
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
 IN Pentacyclo[19.3.1.13,7.19,13.115,19]octacosa-
 1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-5,11,17,23-
 tetrasulfonic acid, 25,26,27,28-tetrahydroxy-, pentasodium salt (9CI)
 MF C28 H24 O16 S4 . 5 Na
 CI COM



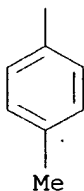
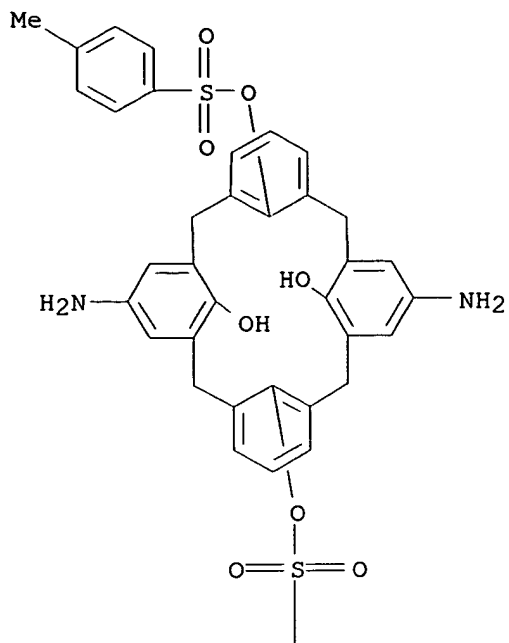
● 5 Na

L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
 IN Pentacyclo[19.3.1.13,7.19,13.115,19]octacosa-1(25),3,5,7(28),9,11,13(27),1
 5,17,19(26),21,23-dodecaene-25,26,27-triol, 5,11,17,23-tetrakis(1,1-
 dimethylethyl)-28-[(3-methylphenyl)methoxy]- (9CI)
 MF C52 H64 O4



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
 IN Pentacyclo[19.3.1.13,7.19,13.115,19]octacosa-1(25),3,5,7(28),9,11,13(27),1
 5,17,19(26),21,23-dodecaene-25,26,27,28-tetrol, 5,17-diamino-,
 25,27-bis(4-methylbenzenesulfonate), dihydrochloride (9CI)
 MF C42 H38 N2 O8 S2 . 2 Cl H



● 2 HCl

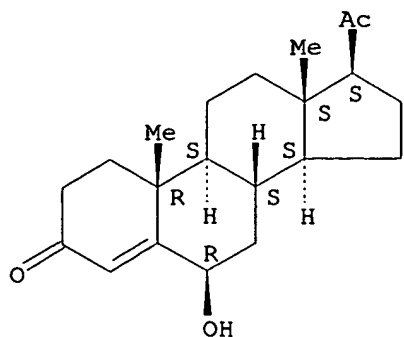
L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
 IN **Pregn-4-ene-3,20-dione, 6-hydroxy-, (6.beta.)-, compd. with**
5,11,17,23,29,35-hexakis(1,1-dimethylethyl)heptacyclo[31.3.1.13,7.19,13.11
5,19.121,25.127,31]dotetraconta-1(37),3,5,7(42),9,11,13(41),15,17,19(40),2
1,23,25(39),27,29,31(38),33,35-octadecaene-37,38,39,40,41,42-hexol (1:1)
(9CI)
 MF C66 H84 O6 . C21 H30 O3

CM 1

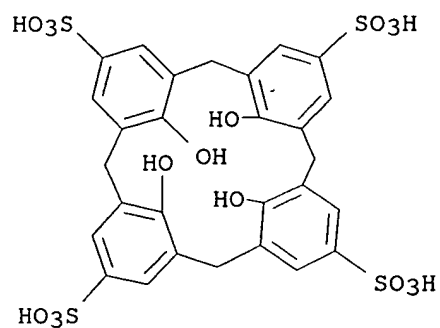
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

Absolute stereochemistry.

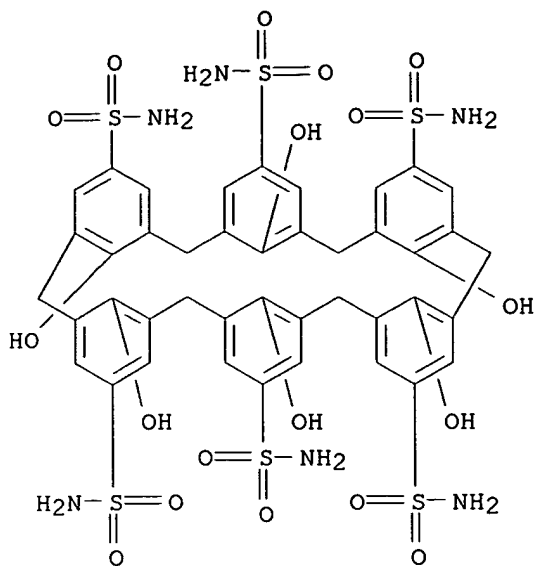


L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
 IN **Pentacyclo[19.3.1.13,7.19,13.115,19]octacos-**
1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-5,11,17,23-
tetrasulfonic acid, 25,26,27,28-tetrahydroxy-, monoammonium salt (9CI)
 MF C28 H24 O16 S4 . H3 N



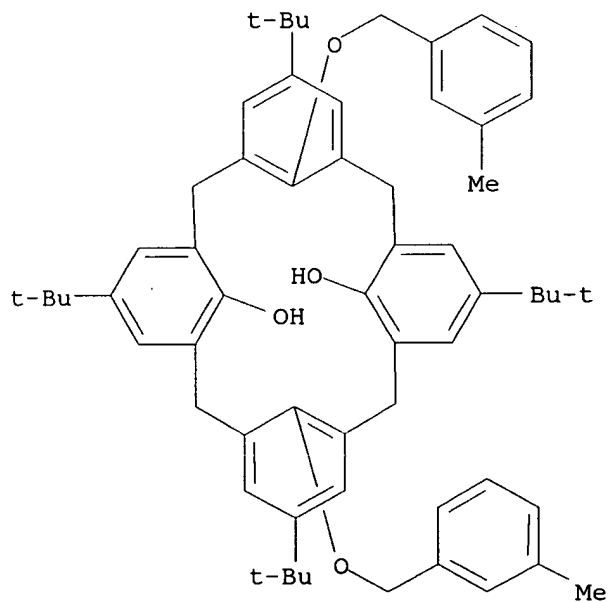
● NH₃

L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
 IN **Heptacyclo[31.3.1.13,7.19,13.115,19.121,25.127,31]dotetraconta-**
1(37),3,5,7(42),9,11,13(41),15,17,19(40),21,23,25(39),27,29,31(38),33,35-
octadecaene-5,11,17,23,29,35-hexasulfonamide, 37,38,39,40,41,42-
hexahydroxy- (9CI)
 MF C42 H42 N6 O18 S6



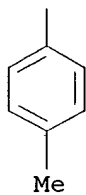
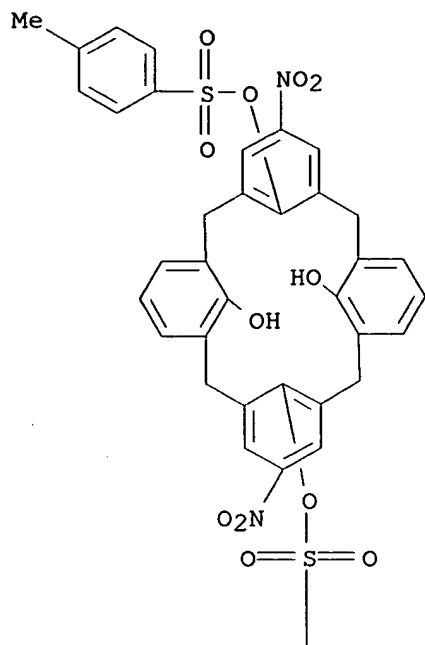
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
 IN Pentacyclo[19.3.1.13,7.19,13.115,19]octacosa-1(25),3,5,7(28),9,11,13(27),1
 5,17,19(26),21,23-dodecaene-25,27-diol, 5,11,17,23-tetrakis(1,1-
 dimethylethyl)-26,28-bis[(3-methylphenyl)methoxy]-, stereoisomer (9CI)
 MF C60 H72 O4



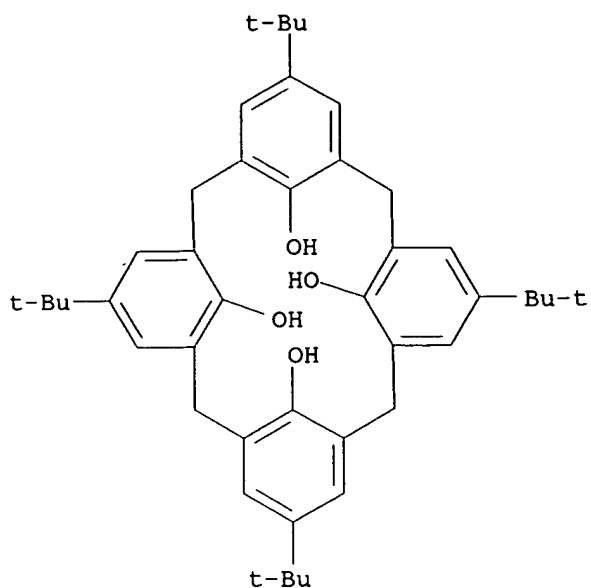
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
 IN Pentacyclo[19.3.1.13,7.19,13.115,19]octacosa-1(25),3,5,7(28),9,11,13(27),1
 5,17,19(26),21,23-dodecaene-25,26,27,28-tetrol, 5,17-dinitro-,
 26,28-bis(4-methylbenzenesulfonate) (9CI)
 MF C42 H34 N2 O12 S2
 CI COM



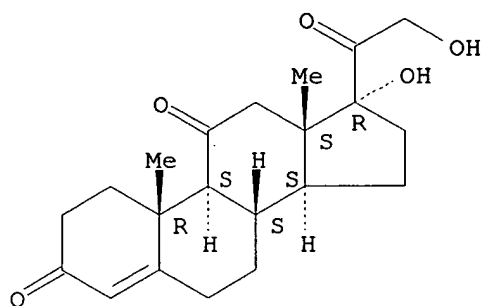
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
 IN **Pregn-4-ene-3,11,20-trione, 17,21-dihydroxy-, compd. with**
5,11,17,23-tetrakis(1,1-dimethylethyl)pentacyclo[19.3.1.13,7.19,13.115,19]
octacos-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-
25,26,27,28-tetrol (1:1) (9CI)
 MF C44 H56 O4 . C21 H28 O5
 CM 1

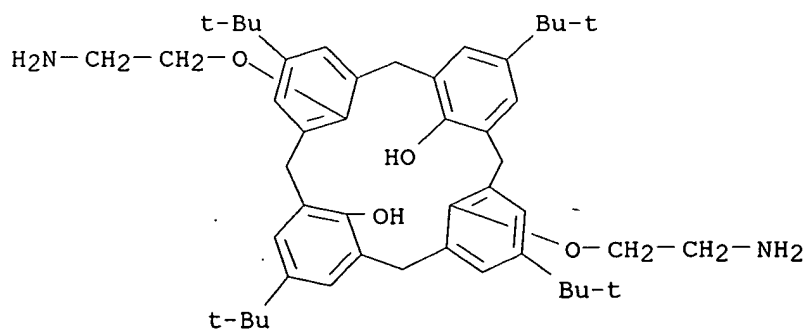


CM 2

Absolute stereochemistry.

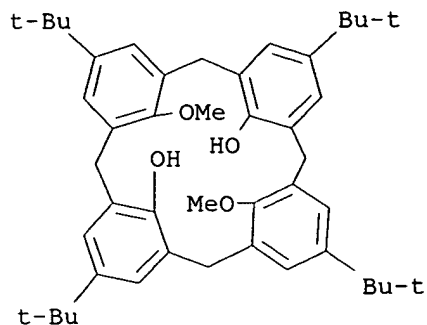


L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
 IN Pentacyclo[19.3.1.13,7.19,13.115,19]octacos-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-25,27-diol, 26,28-bis(2-aminoethoxy)-
 5,11,17,23-tetrakis(1,1-dimethylethyl)- (9CI)
 MF C48 H66 N2 O4
 CI COM



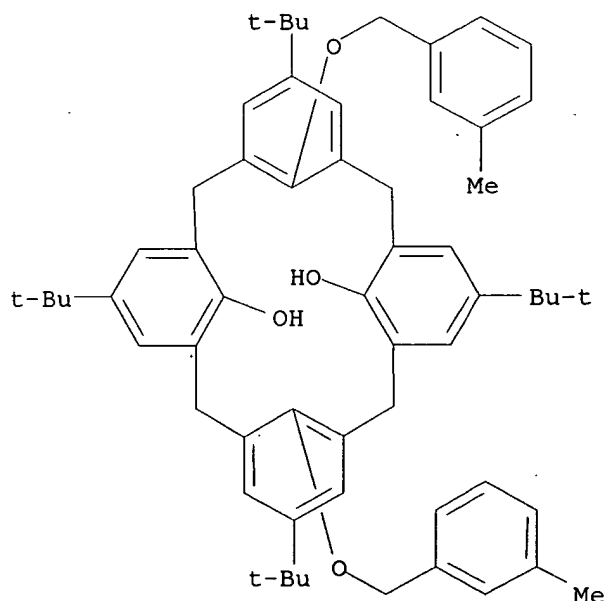
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
 IN Pentacyclo[19.3.1.13,7.19,13.115,19]octacosa-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-25,27-diol, 5,11,17,23-tetrakis(1,1-dimethylethyl)-26,28-dimethoxy- (9CI)
 MF C46 H60 O4
 CI COM



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
 IN Pentacyclo[19.3.1.13,7.19,13.115,19]octacosa-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-25,27-diol, 5,11,17,23-tetrakis(1,1-dimethylethyl)-26,28-bis[(3-methylphenyl)methoxy]-, stereoisomer (9CI)
 MF C60 H72 O4



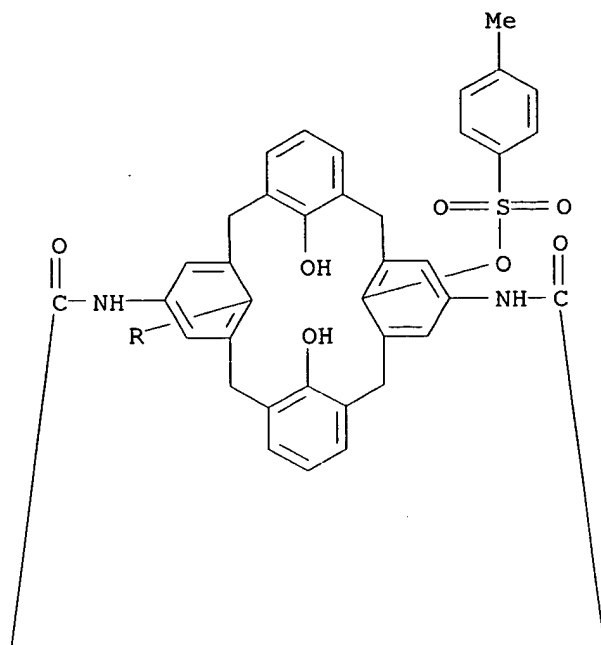
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
 IN Cobaltocenium, [1,1'']-[25,27-dihydroxy-26,28-bis[[4-methylphenyl)sulfonyl]oxy]pentacyclo[19.3.1.13,7.19,13.115,19]octacosa-

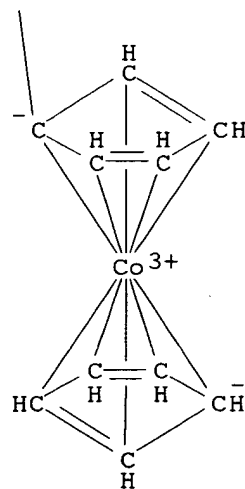
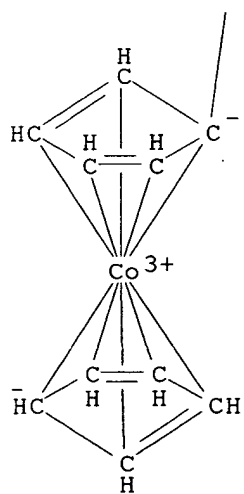
1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-5,17-diyl]bis(iminocarbonyl)]bis-, bis[hexafluorophosphate(1-)] (9CI)
 MF C64 H54 Co2 N2 O10 S2 . 2 F6 P

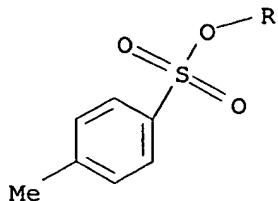
CM 1

PAGE 1-A

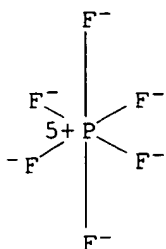


PAGE 2-A





CM 2



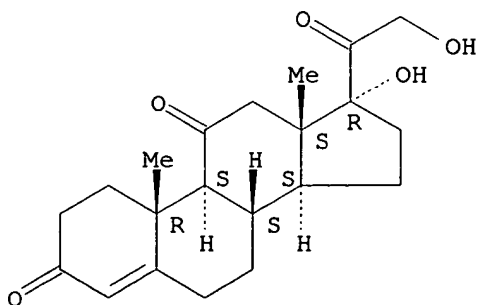
L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
 IN **Pregn-4-ene-3,11,20-trione, 17,21-dihydroxy-, compd. with**
5,11,17,23,29,35-hexakis(1,1-dimethylethyl)heptacyclo[31.3.1.13,7.19,13.11
5,19.121,25.127,31]dotetraconta-1(37),3,5,7(42),9,11,13(41),15,17,19(40),2
1,23,25(39),27,29,31(38),33,35-octadecaene-37,38,39,40,41,42-hexol (1:1)
(9CI)
 MF C66 H84 O6 . C21 H28 O5

CM 1

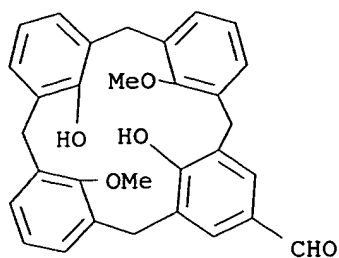
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

Absolute stereochemistry.

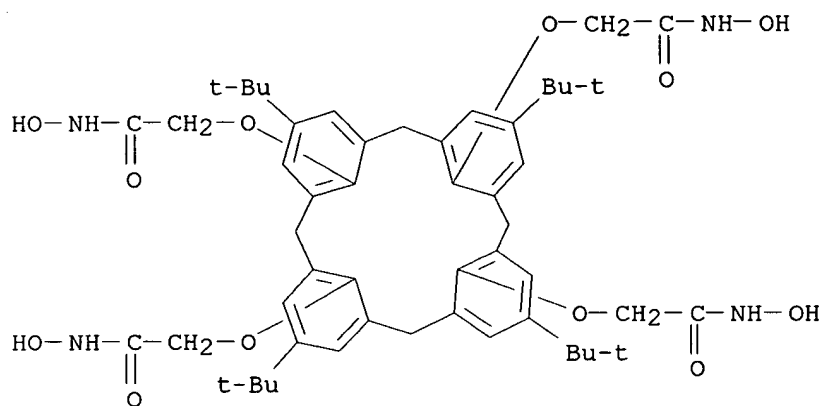


L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
 IN **Pentacyclo[19.3.1.13,7.19,13.115,19]octacos-**
1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-5-carboxaldehyde,
26,28-dihydroxy-25,27-dimethoxy- (9CI)
 MF C31 H28 O5

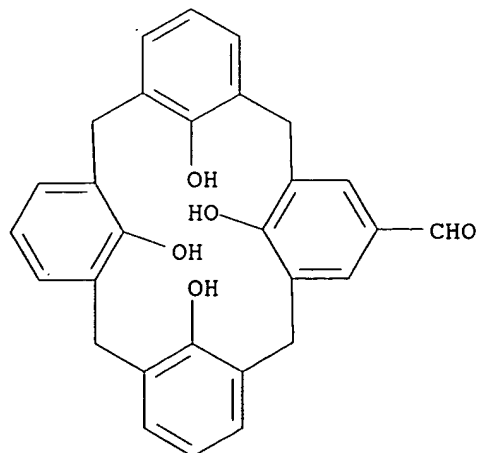


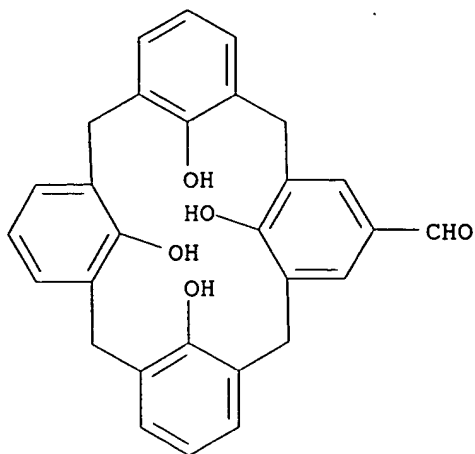
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
 IN **Acetamide, 2,2',2'',2'''-[[5,11,17,23-tetrakis(1,1-dimethylethyl)pentacyclo[19.3.1.13,7.19,13.115,19]octacos-**
1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-25,26,27,28-
tetrayl]tetrakis(oxy)]tetrakis[N-hydroxy- (9CI)
 MF C52 H68 N4 O12



L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
 IN **Pentacyclo[19.3.1.13,7.19,13.115,19]octacos-**
1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-5-carboxaldehyde,
25,26,27,28-tetrahydroxy- (9CI)
 MF C29 H24 O5



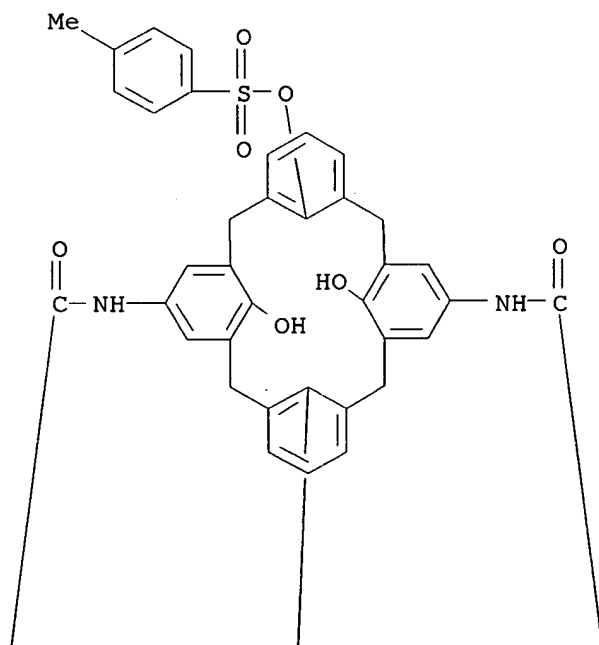


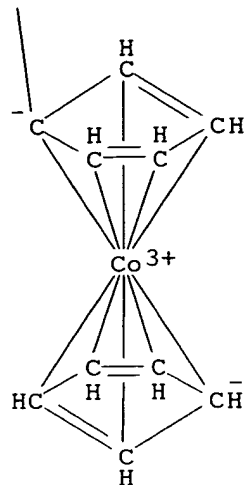
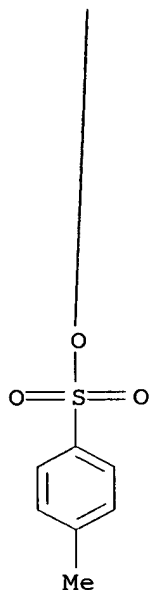
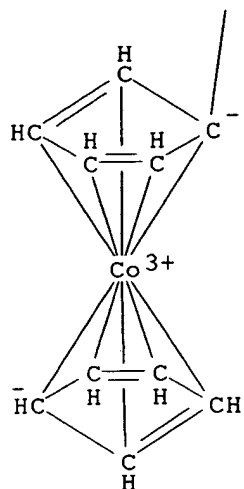
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
 IN Cobaltocenium, [1,1''-[26,28-dihydroxy-25,27-bis[[(4-methylphenyl)sulfonyl]oxy]pentacyclo[19.3.1.13,7.19,13.115,19]octacos-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-5,17-diyl]bis(iminocarbonyl)]bis-, bis[hexafluorophosphate(1-)] (9CI)
 MF C64 H54 Co2 N2 O10 S2 . 2 F6 P

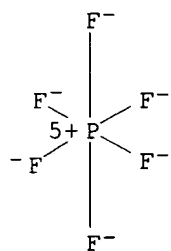
CM 1

PAGE 1-A



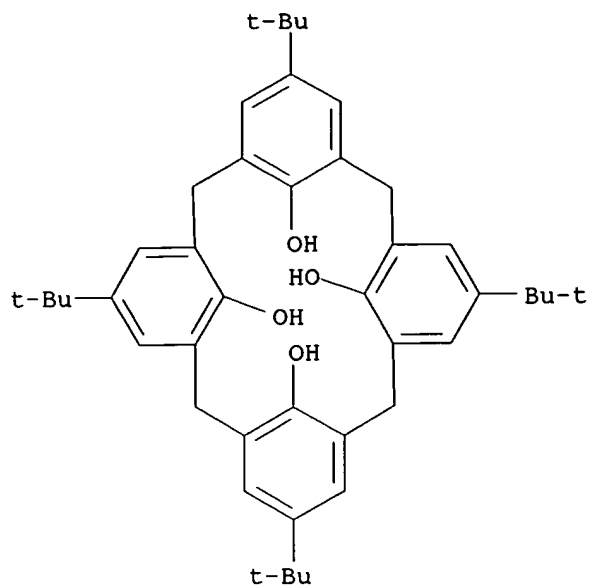


CM 2



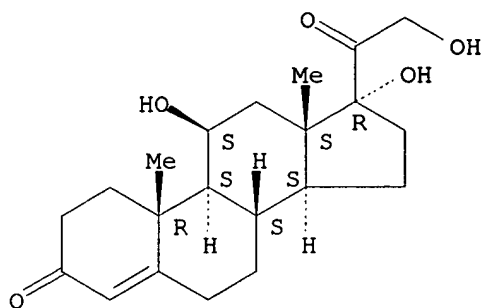
L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
 IN **Pregn-4-ene-3,20-dione, 11,17,21-trihydroxy-, (11.beta.)-, compd.**
with 5,11,17,23-tetrakis(1,1-dimethylethyl)pentacyclo[19.3.1.13,7.19,13.11
5,19]octacos-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-
25,26,27,28-tetrol (1:1) (9CI)
 MF C44 H56 O4 . C21 H30 O5

CM 1

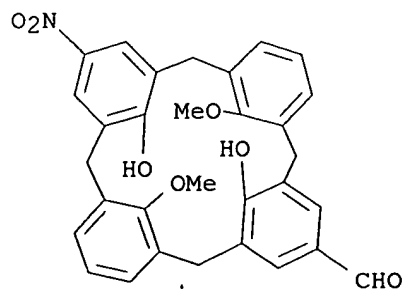


CM 2

Absolute stereochemistry.



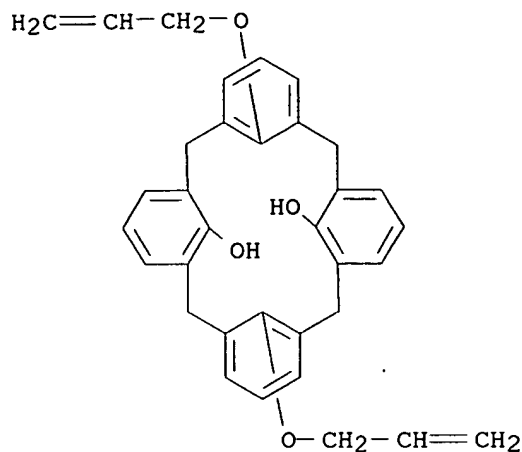
L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
 IN **Pentacyclo[19.3.1.13,7.19,13.115,19]octacos-**
1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-5-carboxaldehyde,
26,28-dihydroxy-25,27-dimethoxy-17-nitro- (9CI)
 MF C31 H27 N O7



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

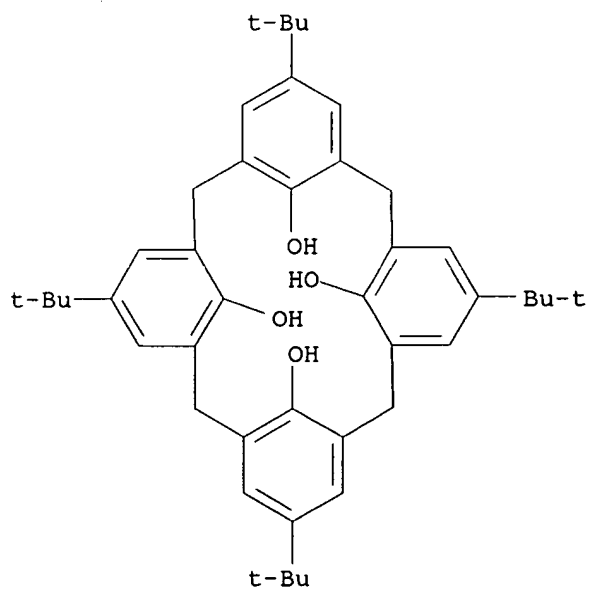
L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS

IN Pentacyclo[19.3.1.13,7.19,13.115,19]octacosa-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-25,27-diol, 26,28-bis(2-propenyloxy)-, stereoisomer (9CI)
 MF C34 H32 O4



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
 IN Pentacyclo[19.3.1.13,7.19,13.115,19]octacosa-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-25,26,27,28-tetrol, 5,11,17,23-tetrakis(1,1-dimethylethyl)- (9CI)
 MF C44 H56 O4
 CI COM

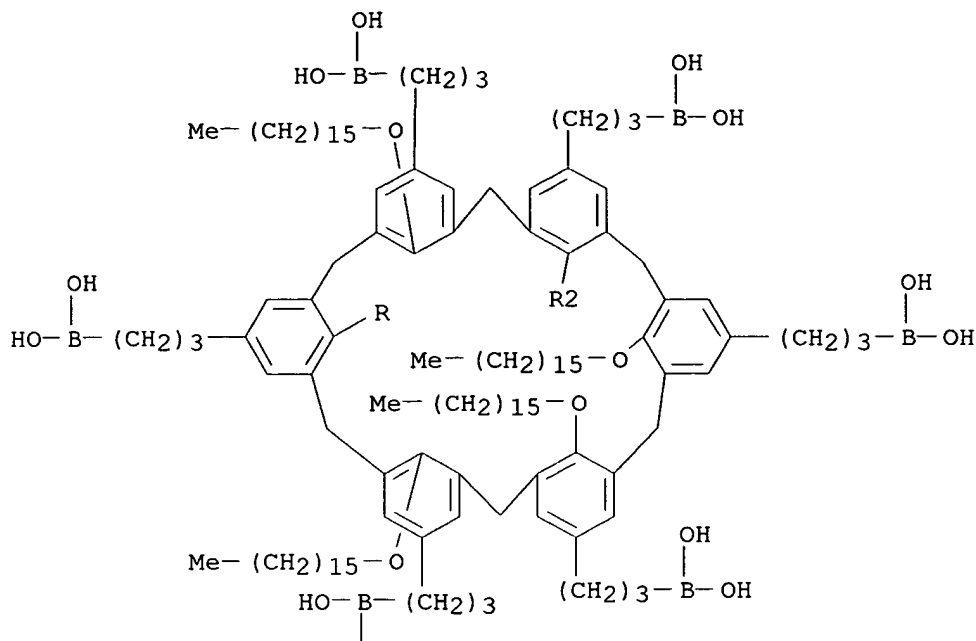


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

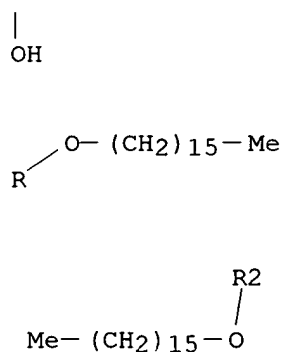
L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS

IN Boronic acid, [[37,38,39,40,41,42-hexakis(hexadecyloxy)heptacyclo[31.3.1.1
3,7.19,13.115,19.121,25.127,31]dotetraconta-1(37),3,5,7(42),9,11,13(41),15
17,19(40),21,23,25(39),27,29,31(38),33,35-octadecaene-5,11,17,23,29,35-
hexayl]hexa-3,1-propanediyl]hexakis- (9CI)
MF C156 H270 B6 O18

PAGE 1-A



PAGE 2-A



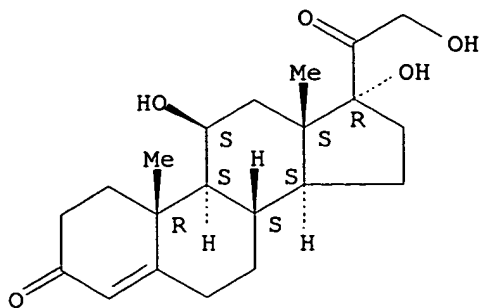
L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
IN **Pregn-4-ene-3,20-dione, 11,17,21-trihydroxy-, (11.beta.)-, compd.**
with 5,11,17,23,29,35-hexakis(1,1-dimethylethyl)heptacyclo[31.3.1.13,7.19,
13.115,19.121,25.127,31]dotetraconta-1(37),3,5,7(42),9,11,13(41),15,17,19(
40),21,23,25(39),27,29,31(38),33,35-octadecaene-37,38,39,40,41,42-hexol
(1:1) (9CI)
MF C66 H84 O6 . C21 H30 O5

CM 1

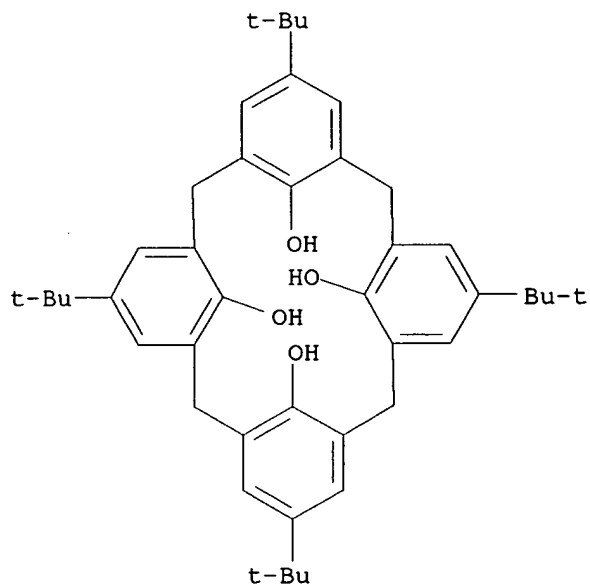
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CM 2

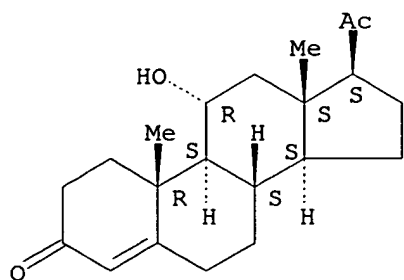
Absolute stereochemistry.



L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
 IN **Pregn-4-ene-3,20-dione, 11-hydroxy-, (11.alpha.)-, compd. with**
5,11,17,23-tetrakis(1,1-dimethylethyl)pentacyclo[19.3.1.13,7.19,13.115,19]
octacos-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-
25,26,27,28-tetrol (1:1) (9CI)
 MF C44 H56 O4 . C21 H30 O3
 CM 1

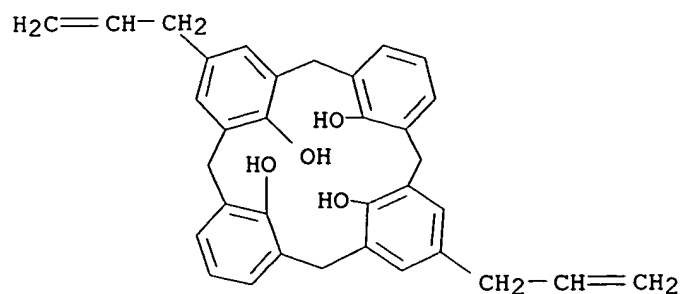


CM 2
 Absolute stereochemistry.



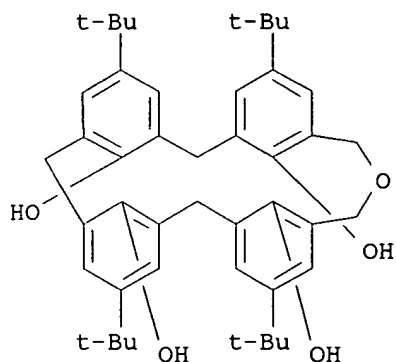
L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
 IN **Pentacyclo[19.3.1.13,7.19,13.115,19]octacos-1(25),3,5,7(28),9,11,13(27),1**

5,17,19(26),21,23-dodecaene-25,26,27,28-tetrol, 11,23-di-2-propenyl- (9CI)
 MF C34 H32 O4



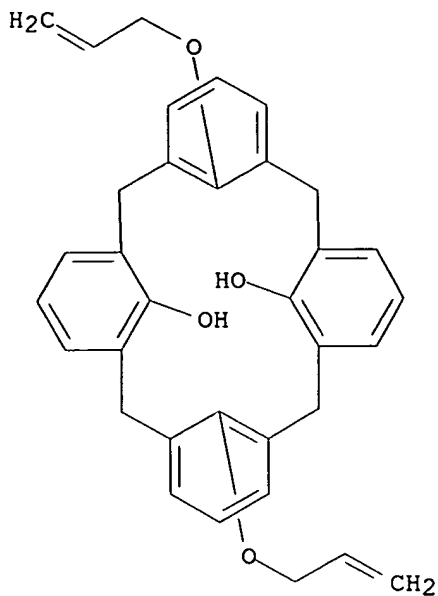
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
 IN 21-Oxapentacyclo[21.3.1.13,7.19,13.115,19]triaconta-
 1(27),3,5,7(30),9,11,13(29),15,17,19(28),23,25-dodecaene-27,28,29,30-
 tetrol, 5,11,17,25-tetrakis(1,1-dimethylethyl)- (9CI)
 MF C45 H58 O5
 CI COM



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

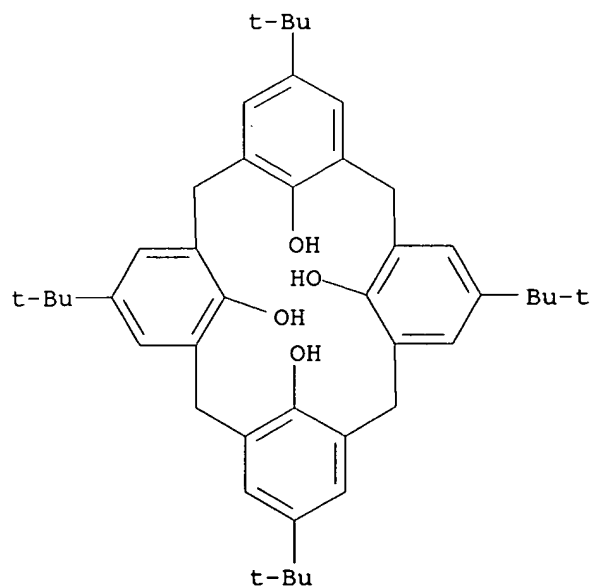
L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
 IN Pentacyclo[19.3.1.13,7.19,13.115,19]octacosa-1(25),3,5,7(28),9,11,13(27),1
 5,17,19(26),21,23-dodecaene-25,27-diol, 26,28-bis(2-propenyloxy)- (9CI)
 MF C34 H32 O4



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

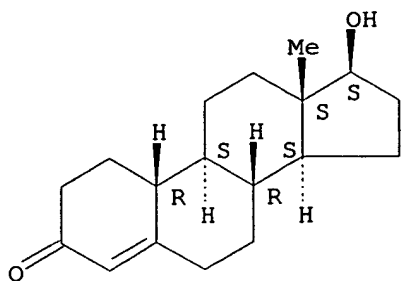
L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
 IN Estr-4-en-3-one, 17-hydroxy-, (17.beta.)-, compd. with
 5,11,17,23-tetrakis(1,1-dimethylethyl)pentacyclo[19.3.1.13,7.19,13.115,19]
 octacos-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-
 25,26,27,28-tetrol (1:1) (9CI)
 MF C44 H56 O4 . C18 H26 O2

CM 1



CM 2

Absolute stereochemistry.



L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
 IN **Pregn-4-ene-3,20-dione, 11-hydroxy-, (11.alpha.)-, compd. with**
5,11,17,23,29,35-hexakis(1,1-dimethylethyl)heptacyclo[31.3.1.13,7.19,13.11
5,19.121,25.127,31]dotetraconta-1(37),3,5,7(42),9,11,13(41),15,17,19(40),2
1,23,25(39),27,29,31(38),33,35-octadecaene-37,38,39,40,41,42-hexol (1:1)
(9CI)

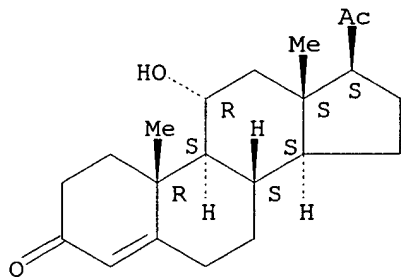
MF C66 H84 O6 . C21 H30 O3

CM 1

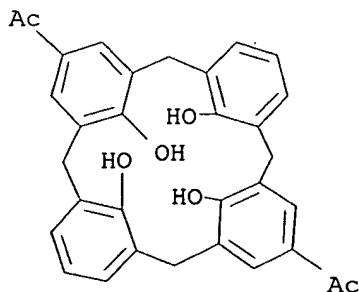
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

Absolute stereochemistry.

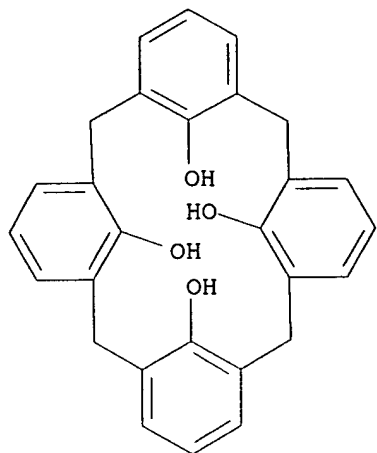


L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
 IN **Ethanone, 1,1'-(25,26,27,28-tetrahydroxypentacyclo[19.3.1.13,7.19,13.**
115,19]octacos-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-
5,17-diyl)bis-, stereoisomer (9CI)
 MF C32 H28 O6



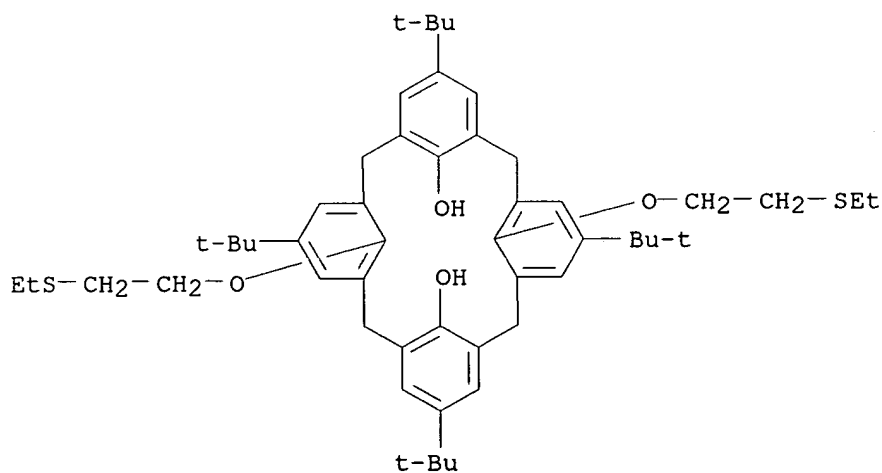
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
 IN Pentacyclo[19.3.1.13,7.19,13.115,19]octacosa-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-25,26,27,28-tetrol (9CI)
 MF C28 H24 O4
 CI COM



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
 IN Pentacyclo[19.3.1.13,7.19,13.115,19]octacosa-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-25,27-diol, 5,11,17,23-tetrakis(1,1-dimethylethyl)-26,28-bis[2-(ethylthio)ethoxy]- (9CI)
 MF C52 H72 O4 S2



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
 IN Estr-4-en-3-one, 17-hydroxy-, (17.beta.)-, compd. with 5,11,17,23,29,35-hexakis(1,1-dimethylethyl)heptacyclo[31.3.1.13,7.19,13.115,19.121,25.127,31]dotetraconta-1(37),3,5,7(42),9,11,13(41),15,17,19(40),21,23,25(39),27,29,31(38),33,35-octadecaene-37,38,39,40,41,42-hexol (1:1)

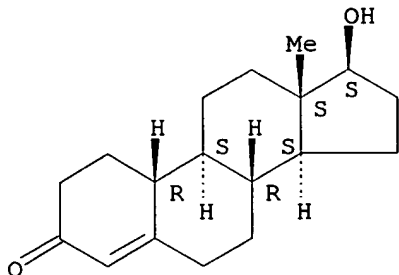
(9CI)
MF C66 H84 O6 . C18 H26 O2

CM 1

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

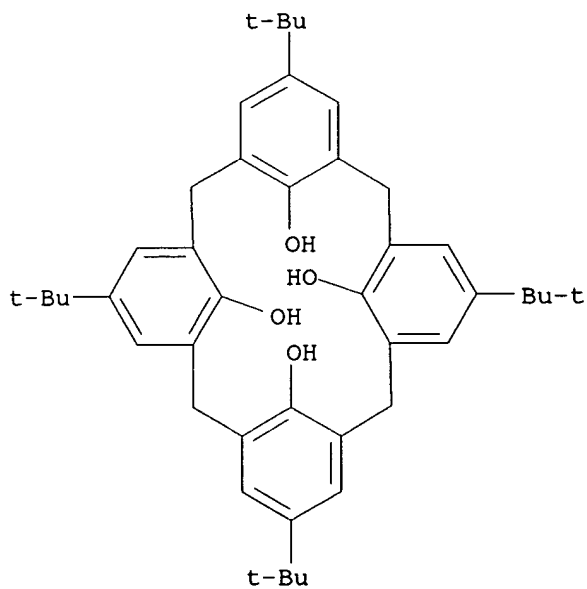
CM 2

Absolute stereochemistry.



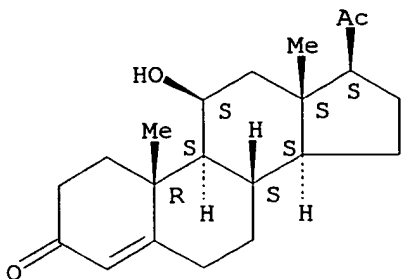
L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
IN **Pregn-4-ene-3,20-dione, 11-hydroxy-, (11.beta.)-, compd. with**
5,11,17,23-tetrakis(1,1-dimethylethyl)pentacyclo[19.3.1.13,7.19,13.115,19]
octacos-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-
25,26,27,28-tetrol (1:1) (9CI)
MF C44 H56 O4 . C21 H30 O3

CM 1

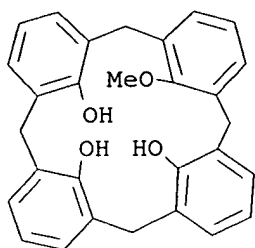


CM 2

Absolute stereochemistry.



L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
 IN Pentacyclo[19.3.1.13,7.19,13.115,19]octacos-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-25,26,27-triol, 28-methoxy-, stereoisomer (9CI)
 MF C29 H26 O4



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L1 56 ANSWERS REGISTRY COPYRIGHT 2002 ACS
 IN Heptacyclo[31.3.1.13,7.19,13.115,19.121,25.127,31]dotetraconta-1(37),3,5,7(42),9,11,13(41),15,17,19(40),21,23,25(39),27,29,31(38),33,35-octadecaene-37,38,39,40,41,42-hexol, 5,11,17,23,29,35-hexakis(1,1-dimethylethyl)- (9CI)
 MF C66 H84 O6
 CI COM

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

ALL ANSWERS HAVE BEEN SCANNED

=> d his

(FILE 'HOME' ENTERED AT 13:03:07 ON 23 JAN 2002)

FILE 'REGISTRY' ENTERED AT 13:03:14 ON 23 JAN 2002

L1 56 S CALIX AND HYDROXY NOT 8

=> s calix and ethanol

240 CALIX

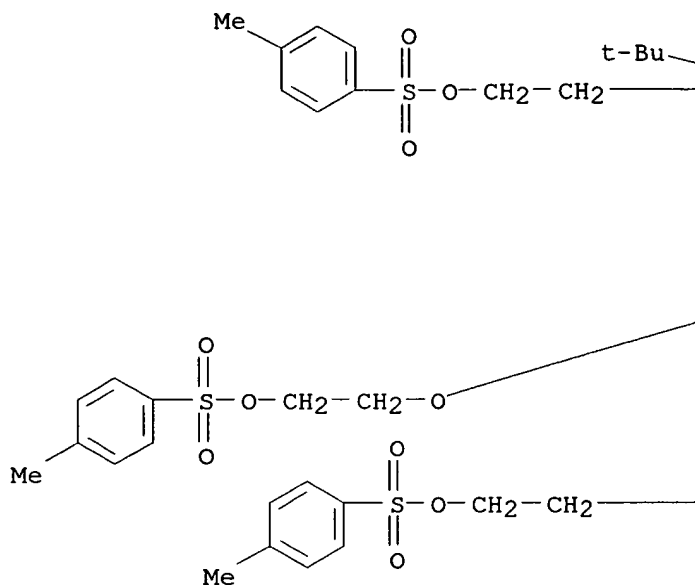
181294 ETHANOL

L2 2 CALIX AND ETHANOL

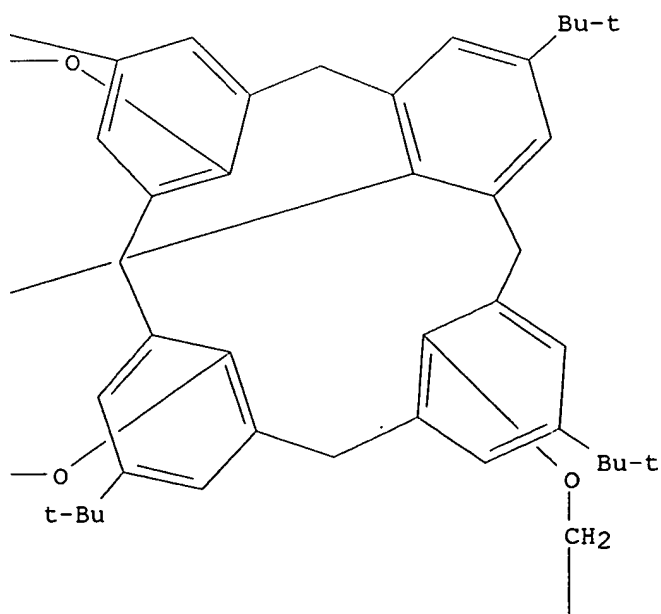
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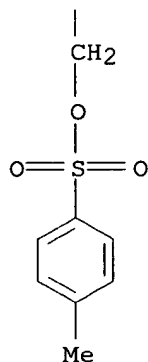
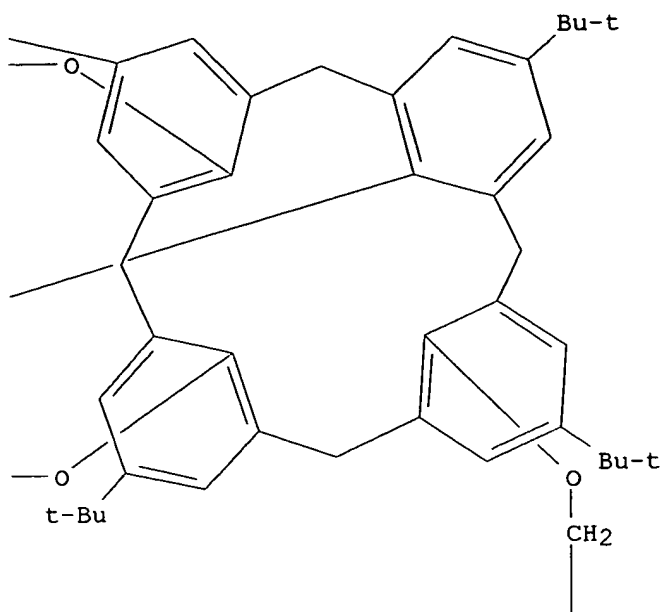
L2 ANSWER 1 OF 2 REGISTRY COPYRIGHT 2002 ACS
 RN 145307-27-3 REGISTRY
 CN Ethanol, 2,2',2'',2'''-[[5,11,17,23-tetrakis(1,1-dimethylethyl)pentacyclo[19.3.1.13,7.19,13.115,19]octacosane-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-25,26,27,28-tetrayl]tetrakis(oxy)]tetrakis-, tetrakis(4-methylbenzenesulfonate) (9CI) (CA INDEX NAME)
 OTHER CA INDEX NAMES:
 CN Pentacyclo[19.3.1.13,7.19,13.115,19]octacosane, ethanol deriv.
 OTHER NAMES:
 CN 5,11,17,23-Tetra-tert-butyl-25,26,27,28-tetrakis(2-((4-tolyl)sulfonyl)oxy)ethoxy)calix[4]arene
 MF C80 H96 O16 S4
 SR CA
 LC STN Files: CA, CAPLUS, CASREACT, TOXCENTER, USPATFULL

PAGE 1-A



PAGE 1-B

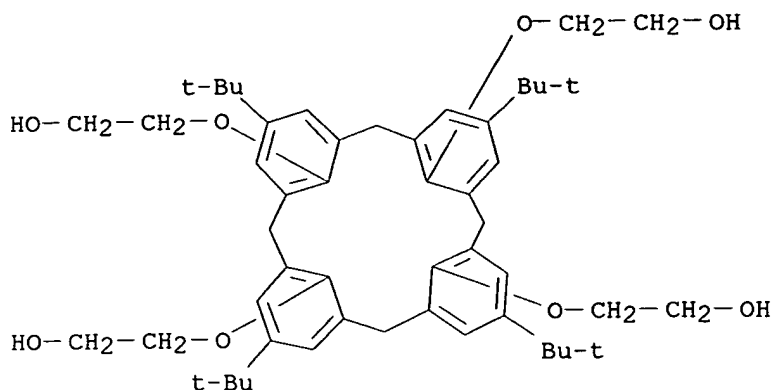




PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

9 REFERENCES IN FILE CA (1967 TO DATE)
9 REFERENCES IN FILE CAPLUS (1967 TO DATE)

L2 ANSWER 2 OF 2 REGISTRY COPYRIGHT 2002 ACS
RN 145307-26-2 REGISTRY
CN **Ethanol, 2,2',2'',2'''-[5,11,17,23-tetrakis(1,1-dimethylethyl)pentacyclo[19.3.1.13,7.19,13.115,19]octacosane-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-25,26,27,28-tetrayl]tetrakis(oxy)]tetrakis-** (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN **Pentacyclo[19.3.1.13,7.19,13.115,19]octacosane, ethanol deriv.**
OTHER NAMES:
CN **5,11,17,23-tert-Butyl-25,26,27,28-(2-hydroxyethoxy)calix[4]arene**
CN **5,11,17,23-Tetra-tert-butyl-25,26,27,28-tetrakis(2-hydroxyethoxy)calix[4]arene**
MF C52 H72 O8
SR CA
LC STN Files: CA, CAPLUS, CASREACT, TOXCENTER, USPATFULL



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

11 REFERENCES IN FILE CA (1967 TO DATE)
11 REFERENCES IN FILE CAPLUS (1967 TO DATE)

=> s calix and methanol
240 CALIX
227791 METHANOL
L3 0 CALIX AND METHANOL

=> s calix and propanol
240 CALIX
99698 PROPANOL
L4 0 CALIX AND PROPANOL

=> s calix and anol
240 CALIX
370 ANOL
L5 0 CALIX AND ANOL

=> s calix and ol
240 CALIX
2125137 OL
L6 145 CALIX AND OL

=> file ca		
COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	57.08	57.23

FILE 'CA' ENTERED AT 13:06:54 ON 23 JAN 2002
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FILE COVERS 1907 - 17 Jan 2002 VOL 136 ISS 4
FILE LAST UPDATED: 17 Jan 2002 (20020117/ED)

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=> s 12
L7 14 L2

=> d all 1-14

L7 ANSWER 1 OF 14 CA COPYRIGHT 2002 ACS
AN 133:135373 CA
TI Calix[4]arenes with narrow rim 2-mercaptoethoxy substituents as potential precursor molecules for metallacages and sensors
AU Knoblauch, Stephan; Falana, O. Matthew; Nam, Jaewook; Roundhill, D. Max; Hennig, Horst; Zeckert, Kornelia
CS Department of Chemistry and Biochemistry, Texas Tech University, Lubbock, TX, 79409-1061, USA
SO Inorg. Chim. Acta (2000), 300-302, 328-332
CODEN: ICHAA3; ISSN: 0020-1693
PB Elsevier Science S.A.
DT Journal
LA English
CC 29-9 (Organometallic and Organometalloidal Compounds)
OS CASREACT 133:135373
AB The compd. 5,11,17,23-tetra-tert-butyl-25,26,27,28-tetrakis(2-mercaptoethoxy)calix[4]arene, prepd. by an improved method, reacts with methylmercuric acetate to give 5,11,17,23-tetra-tert-butyl-25,26,27,28-tetrakis(2-(methylmercuriothio)ethoxy)calix[4]arene. Under vacuum this compd. converts to bis(2-(5,11,17,23-tetra-tert-butyl-25,26,27-tris(2-(methylmercuriothio)ethoxy)calix[4]arene-28-oxy)ethanethiolato)mercury by loss of dimethylmercury. Addnl. loss of dimethylmercury gave a product that is intermediate between bis(5,11,17,23-tetra-tert-butyl-25,26-bis(2-(methylmercuriothio)ethoxy)calix[4]arene-27,28-bis(2-oxyethanethiolato))dimercury, bis(5,11,17,23-tetra-tert-butyl-25-(2-(methylmercuriothio)ethoxy)calix[4]arene-26,27,28-tris(2-oxyethanethiolato))trimercury, and the cluster bis(5,11,17,23-tetra-tert-butylcalix[4]arene-25,26,27,28-tetrakis(2-oxyethanethiolato))tetramercury (11). 5,11,17,23-Tetra-tert-butyl-25,26,27,28-tetrakis(2-mercaptoethoxy)calix[4]arene reacts with 9-chloromethylanthracene to give 5,11,17,23-tetra-tert-butyl-25,26,27,28-tetrakis(2-(9-anthracylmethylthio)ethoxy)calix[4]arene.
ST calixarene mercuriothioethoxy anthracylmethylthioethoxy deriv prepn; fluorescence anthracylmethylthioethoxycalixarene; mercury thiolate metallacage calixarene deriv prepn
IT Fluorescence
(by tetrakis(anthracylmethylthioethoxy)calix[4]arene)
IT Metacyclophanes
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of mercuriothioethoxy- and anthracylmethylthioethoxy-narrow-rim-

substituted calix[4]arenes)

IT Cage compounds
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (prepn. of mercury metallacage by vacuum treatment of
 tetrakis(mercuriothioethoxy)calix[4]arene)

IT 60705-62-6, 5,11,17,23-Tetra-tert-butyl-25,26,27,28-
 tetrahydroxycalix[4]arene
 RL: RCT (Reactant)
 (condensation with Et bromoacetate)

IT 105-36-2, Ethyl bromoacetate
 RL: RCT (Reactant)
 (condensation with calixarene tetrol)

IT 24463-19-2, 9-(Chloromethyl)anthracene
 RL: RCT (Reactant)
 (condensation with mercaptoethoxy-substituted calixarene)

IT 108-07-6, Methylmercury acetate
 RL: RCT (Reactant)
 (coordinative condensation with mercaptoethoxy-substituted calixarene)

IT 286413-80-7P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
 (formation and elimination of dimethylmercury in vacuum)

IT 177191-42-3P, 25,26,27,28-Tetrakis(2-(acetylthio)ethoxy)-5,11,17,23-tetra-
 tert-butylcalix[4]arene
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
 (prepn. and acid hydrolysis to thiol)

IT 286413-79-4P, 5,11,17,23-Tetra-tert-butyl-25,26,27,28-tetrakis(2-
 (methylmercuriothio)ethoxy)calix[4]arene
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
 (prepn. and elimination of dimethylmercury in vacuum)

IT 286413-78-3P, 25,26,27,28-Tetrakis(2-((9-anthracenyl)methyl)thio)ethoxy)-
 5,11,17,23-tetra-tert-butylcalix[4]arene
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (prepn. and fluorescence of)

IT **145307-27-3P**, 5,11,17,23-Tetra-tert-butyl-25,26,27,28-tetrakis(2-
 ((4-tolyl)sulfonyl)oxy)ethoxy)calix[4]arene
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
 (prepn. and metathesis with potassium thioacetate)

IT 97600-39-0P, 5,11,17,23-Tetra-tert-butyl-25,26,27,28-tetrakis(2-ethoxy-2-
 oxoethoxy)calix[4]arene
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
 (prepn. and redn. to alc.)

IT **145307-26-2P**, 5,11,17,23-Tetra-tert-butyl-25,26,27,28-tetrakis(2-
 hydroxyethoxy)calix[4]arene
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
 (prepn. and tosylation of)

IT 286413-81-8P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (prepn. of)

IT 169561-47-1P, 5,11,17,23-Tetra-tert-butyl-25,26,27,28-tetrakis(2-
 mercaptoethoxy)calix[4]arene
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
 (prepn., methylmercuration and condensation with
 (chloromethyl)anthracene)

IT 98-59-9, Tosyl chloride
 RL: RCT (Reactant)
 (tosylation of hydroxyethoxy-substituted calixarene by)

RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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- (3) Czarnik, A; Acc Chem Res 1994, V27, P302 CA
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 (15) Yordanov, A; Inorg Chem 1998, V37, P3526 CA

L7 ANSWER 2 OF 14 CA COPYRIGHT 2002 ACS

AN 133:17635 CA

TI Preparation of ((phosphinylacetyl)amino)alkoxy-substituted calixarenes and their use in extracting actinides and lanthanides

IN Dozol, Jean-francois; Garcia Carrera, Alejandro; Bohmer, Volker; Matthews, Susan E.

PA Commissariat a l'Energie Atomique, Fr.

SO PCT Int. Appl., 44 pp.

CODEN: PIXXD2

DT Patent

LA French

IC ICM C07F009-53

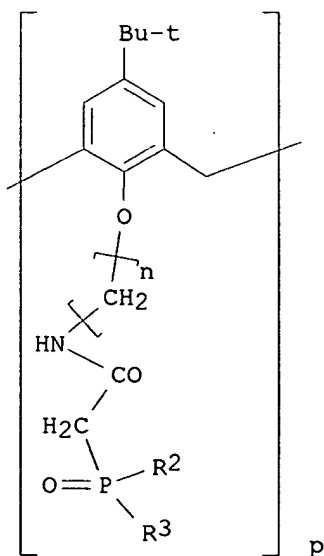
ICS G21C019-46; C22B003-00

CC 29-7 (Organometallic and Organometalloidal Compounds)

Section cross-reference(s): 22, 68, 71

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000031087	A1	20000602	WO 1999-FR2893	19991124
	W: JP, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	FR 2786487	A1	20000602	FR 1998-14902	19981126
	FR 2786487	B1	20010105		
	EP 1133501	A1	20010919	EP 1999-956134	19991124
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
PRAI	FR 1998-14902	A	19981126		
	WO 1999-FR2893	W	19991124		
OS	CASREACT 133:17635; MARPAT 133:17635				
GI					



AB ((Phosphinylacetyl)amino)alkoxy-substituted calixarenes (I; R1 = alkyl,

aryl, H; R2 and R3, identical or different, = alkyl or aryl; n = 2-8; p = 4-8) and method of prepn. are claimed. The prepn. involves condensation of (aminoalkoxy)calixarenes with R2R3P(O)CH2CO2R4 (R4 = p-nitrophenyl, 2,4-dinitrophenyl). The (aminoalkoxy)calixarenes were prepd. from hydroxycalixarenes and N-(bromoalkyl)phthalimides followed by reaction with hydrazine; alternatively, for n = 2, hydroxycalixarenes were reacted with alkyl bromoacetates to give esters that were reduced to alcs., which were converted to tosylates, which were reacted with sodium azide followed by catalytic hydrogenation. Data are given for the use of said calixarenes for extg. actinides and lanthanides from aq. solns. into hexyl o-nitrophenyl ether. The distribution coeffs. for the claimed calixarenes are much greater than those for the comparison extractant, Ph2P(O)CH2C(O)NiBu2. These extractants may be useful for processing aq. effluents coming from used nuclear fuel retreatment installations.

ST phosphinylacetamidoalkoxy calixarene prepn extn actinide lanthanide; spent nuclear fuel processing lanthanide actinide extn phosphinylacetamidoalkoxy calixarene

IT Actinides
Rare earth metals, properties
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(extn. by ((phosphinylacetyl)amino)alkoxy-substituted calixarenes)

IT Partition
(of actinides and lanthanides between aq. soln. and hexyl o-nitrophenyl ether by ((phosphinylacetyl)amino)alkoxy-substituted calixarenes)

IT Extraction
(of actinides and lanthanides by ((phosphinylacetyl)amino)alkoxy-substituted calixarenes)

IT Extractants
(prepn. of ((phosphinylacetyl)amino)alkoxy-substituted calixarenes and use in extg. actinides and lanthanides)

IT Metacyclophanes
RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); USES (Uses)
(prepn. of ((phosphinylacetyl)amino)alkoxy-substituted calixarenes and use in extg. actinides and lanthanides)

IT Nuclear fuel reprocessing
(prepn. of ((phosphinylacetyl)amino)alkoxy-substituted calixarenes as extractants for actinides and lanthanides for potential use in treating aq. effluents from)

IT 97937-88-7, N,N-Diisobutyl(diphenylphosphinyl)acetamide
RL: NUU (Other use, unclassified); USES (Uses)
(comparison to alkoxy-substituted calixarenes as extractants for actinides and lanthanides)

IT 105-36-2, Ethyl bromoacetate
RL: RCT (Reactant)
(condensation with hydroxy-substituted calixarene in presence of base)

IT 98-59-9, Tosyl chloride
RL: RCT (Reactant)
(condensation with hydroxyethoxy-substituted calixarene)

IT 178818-92-3, 4-Nitrophenyl (diphenylphosphinyl)acetate
RL: RCT (Reactant)
(condensations with aminoalkoxy-substituted calixarenes)

IT 7439-91-0, Lanthanum, properties 7440-00-8, Neodymium, properties
7440-19-9, Samarium, properties 7440-35-9, Americium, properties
7440-45-1, Cerium, properties 7440-51-9, Curium, properties 7440-53-1, Europium, properties
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(extn. from aq. solns. to hexyl o-nitrophenyl ether by ((phosphinylacetyl)amino)alkoxy-substituted calixarenes)

IT 5394-18-3, N-(4-Bromobutyl)phthalimide 5460-29-7, N-(3-Bromopropyl)phthalimide
RL: RCT (Reactant)
(metathesis with sodium salts of hydroxycalixarenes)

IT 161345-29-5P 166804-12-2P 226998-70-5P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and condensation with phosphinylacetic acid ester)

IT 145307-26-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and condensation with tosyl chloride)

IT 226998-99-8P 226999-10-6P 226999-22-0P
RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); USES (Uses)
(prepn. and extn. of actinides and lanthanides by)

IT 145307-27-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and metathesis with sodium azide followed by hydrogenation to amine)

IT 226998-58-9P 226998-61-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and reaction with hydrazine to give aminoalkoxy-substituted calixarenes)

IT 271579-14-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and redn. to alc.)

IT 60705-62-6
RL: RCT (Reactant)
(reactions with Et bromoacetate and N-bromoalkylphthalimide in presence of base)

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE
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(2) Commissariat A L'Energie Atomique; WO 9623800 A 1996 CA

L7 ANSWER 3 OF 14 CA COPYRIGHT 2002 ACS
AN 132:347257 CA
TI Rigidification of the cone conformation of p-tert-butylcalix[4]arene with carbamate groups on the lower rim
AU McKervey, M. Anthony; Millership, Jeffrey S.; Russell, Julie A.; Nieuwenhuyzen, Mark; Pitarch, Miguel
CS School of Chemistry, The Queen's University of Belfast, Belfast, BT9 5AG, UK
SO Supramol. Chem. (1998), 9(2), 115-119
CODEN: SCHEER; ISSN: 1061-0278
PB Gordon & Breach Science Publishers
DT Journal
LA English
CC 22-3 (Physical Organic Chemistry)
AB The conformation of a p-tert-butylcalix[4]arene with four (R)-PhCHMeNHCO₂CH₂CH₂O residues on the lower rim has been investigated by X-ray diffraction and ¹H NMR anal. The mol. adopts a pinched cone conformation in the solid state with intramol. hydrogen bonding between the carbonyl groups and the nitrogen atoms of proximal carbamate podands. The NMR evidence indicates that this conformation persists in soln. at room temp. At temps. >80.degree.C the NMR spectrum is that of a time-averaged C_{4v} sym. cone conformation.
ST conformation calixarene carbamate podand crystallog NMR
IT Hydrogen bond
(intramol.; rigidification of the cone conformation of p-tert-butylcalix[4]arene with carbamate groups on the lower rim)

IT Conformation
Conformational barrier
Conformational transition
Crystal structure
Hydrogen bond
NMR (nuclear magnetic resonance)
Supramolecular structure
(rigidification of the cone conformation of p-tert-butylcalix[4]arene with carbamate groups on the lower rim)

IT Podands

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (rigidification of the cone conformation of p-tert-butylcalix[4]arene
 with carbamate groups on the lower rim)

IT 33375-06-3
 RL: RCT (Reactant)
 (carbamylation; rigidification of the cone conformation of
 p-tert-butylcalix[4]arene with carbamate groups on the lower rim)

IT 145307-26-2P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
 (carbamylation; rigidification of the cone conformation of
 p-tert-butylcalix[4]arene with carbamate groups on the lower rim)

IT 269744-98-1P
 RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP
 (Preparation)
 (crystallog.; rigidification of the cone conformation of
 p-tert-butylcalix[4]arene with carbamate groups on the lower rim)

RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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- (10) Kelderman, E; Angew Chem Int Ed Engl 1992, V31, P1075
- (11) Malone, J; J Chem Soc Chem Commun 1995, P2151 CA
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 1990
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L7 ANSWER 4 OF 14 CA COPYRIGHT 2002 ACS

AN 130:209752 CA

TI Extraction and complexation of alkali, alkaline earth, and F-element
 cations by calixaryl phosphine oxides

AU Arnaud-Neu, F.; Browne, J. K.; Byrne, D.; Marrs, D. J.; McKerver, M. A.;
 O'Hagan, P.; Schwing-Weill, M. J.; Walker, A.

CS Laboratoire de Chimie-Physique, ECPM, Strasbourg, F-67000, Fr.

SO Chem.--Eur. J. (1999), 5(1), 175-186
 CODEN: CEUJED; ISSN: 0947-6539

PB Wiley-VCH Verlag GmbH

DT Journal

LA English

CC 29-7 (Organometallic and Organometalloidal Compounds)
 Section cross-reference(s): 68, 79

AB A series of new calixarene derivs. with phosphine oxide groups on the
 lower rim and, for comparison, a series of noncalixarene phosphine oxides
 have been synthesized. Their extn. power for alkali and alk. earth
 cations from aq. metal picrate soln. into dichloromethane have been detd.
 as well as the stability consts. in methanol of the 1:1 complexes of
 several members of the calixarene series. Important selectivity trends
 are revealed by both methods. The extn. power from aq. nitrate solns. (1M
 in HNO3) towards europium(III), as a model for trivalent actinides, and
 thorium(IV), as a model for tetravalent actinides, has been studied in
 detail for eight sym. calixarene derivs., which differ in either
 calixarene size, the substituent at the upper rim (tert-Bu or hydrogen) or
 the no. of methylene groups sepg. the phenolic oxygen atoms from the
 phosphorus atoms. The stoichiometry of the extd. species was
 characterized by a classical log-log plot anal. All the calixarenes
 tested are far better extractants than typical noncalixarene extractants,
 for example, TOPO and CMPO, currently in use in the treatment of
 radioactive waste; they ext. thorium better than europium. The influence

of the nitric acid concn. and of the sodium nitrate concn. in the aq. phase on the extn. efficiency was also examd. in order to assess the possible application of these compds. for the decategorization of liq. nuclear waste. Several thorium complexes have been characterized by their stability consts. in methanol.

- ST calixaryl phosphine oxide prepn extn complexation alkali alk actinide;
stability const alk earth cation calixaryl phosphine oxide
- IT Complexation
Extractants
Extraction
Formation constant
(extn. and complexation of alkali, alk. earth, and F-element cations by calixaryl phosphine oxides)
- IT Actinides
Alkali metal ions
Alkaline earth ions
RL: ANT (Analyte); RCT (Reactant); ANST (Analytical study)
(extn. and complexation of alkali, alk. earth, and F-element cations by calixaryl phosphine oxides)
- IT 7439-93-2D, Lithium, calixarene phosphine oxide complexes 7439-95-4D, Magnesium, calixarene phosphine oxide complexes 7440-09-7D, Potassium, calixarene phosphine oxide complexes 7440-17-7D, Rubidium, calixarene phosphine oxide complexes 7440-23-5D, Sodium, calixarene phosphine oxide complexes 7440-24-6D, Strontium, calixarene phosphine oxide complexes 7440-29-1D, Thorium, calixarene and alkyl phosphine oxide complexes 7440-39-3D, Barium, calixarene phosphine oxide complexes 7440-46-2D, Cesium, calixarene phosphine oxide complexes 7440-53-1D, Europium, calixarene and alkyl phosphine oxide complexes 7440-70-2D, Calcium, calixarene phosphine oxide complexes
RL: ANT (Analyte); RCT (Reactant); ANST (Analytical study)
(extn. and complexation of alkali, alk. earth, and F-element cations by calixaryl phosphine oxides)
- IT 2071-21-8D, thorium and europium complexes 4141-50-8D, thorium and europium complexes 40468-55-1D, thorium and europium complexes 53889-34-2D, thorium and europium complexes 197726-74-2 201538-20-7
RL: ARG (Analytical reagent use); RCT (Reactant); ANST (Analytical study); USES (Uses)
(extn. and complexation of alkali, alk. earth, and F-element cations by calixaryl phosphine oxides)
- IT 171979-66-1P 172910-67-7P 172910-68-8P 172910-69-9P 172910-70-2P 172910-71-3P 220923-73-9P 220923-74-0P 220923-75-1P
RL: ARG (Analytical reagent use); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
(extn. and complexation of alkali, alk. earth, and F-element cations by calixaryl phosphine oxides)
- IT 171979-66-1D, alkali, alkali earth, lanthanide and actinide complexes 172910-67-7D, thorium and europium complexes 172910-68-8D, thorium and europium complexes 172910-69-9D, alkali, alkali earth, lanthanide and actinide complexes 172910-70-2D, thorium and europium complexes 172910-71-3D, thorium and europium complexes 201538-20-7D, alkali, alkali earth, lanthanide and actinide complexes 220923-73-9D, thorium and europium complexes 220923-74-0D, alkali, alkali earth, lanthanide and actinide complexes 220923-76-2D, alkali and alkali earth complexes
RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
(extn. and complexation of alkali, alk. earth, and F-element cations by calixaryl phosphine oxides)
- IT 33730-69-7 81475-22-1, p-tert-Butylcalix[5]arene 92003-62-8 92003-63-9 97600-39-0 97600-43-6 97600-45-8 97600-47-0
145307-26-2 163836-78-0
RL: RCT (Reactant)
(extn. and complexation of alkali, alk. earth, and F-element cations by calixaryl phosphine oxides)
- IT **145307-27-3P** 163836-79-1P 163836-80-4P 163836-81-5P 163836-82-6P 172910-72-4P 172910-73-5P 172910-74-6P 172910-75-7P 172910-76-8P 172910-77-9P 172910-78-0P 172910-79-1P 172910-80-4P 172910-81-5P 172910-82-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)

(extn. and complexation of alkali, alk. earth, and F-element cations by calixaryl phosphine oxides)

IT 542-92-7, Cyclopentadiene, reactions
 RL: RCT (Reactant)
 (reaction with bis(diphenylphosphinyl)acetylene)

IT 5112-95-8
 RL: RCT (Reactant)
 (reaction with cyclopentadiene)

RE.CNT 42 THERE ARE 42 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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- (2) Arnaud-Neu, F; J Chem Soc Perkin Trans 2 1996, P1175 CA
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- (39) Vicens, J; Calixarenes 50th Anniversary: Commemorative Issue, J Incl Phenom Mol Recogn Chem 1994, V19(1-4)
- (40) Vicens, J; Calixarenes a Versatile Class of Macrocyclic Compounds 1991
- (41) Yaftian, M; J Incl Phenom 1997, V27, P127 CA
- (42) Yaftian, M; J Incl Phenom 1997, V29, P137 CA

L7 ANSWER 5 OF 14 CA COPYRIGHT 2002 ACS

AN 130:110288 CA

TI Preparation of calixarene tubes as cation receptors

IN Schmitt, Philippe; Beer, Paul Derek

PA The Secretary of State for Defence, UK

SO PCT Int. Appl., 23 pp.
 CODEN: PIXXD2

DT Patent

LA English

IC ICM C07D493-18
 ICS G01N027-333; A61K031-335; C01D003-14; C07B063-00

CC 28-23 (Heterocyclic Compounds (More Than One Hetero Atom))

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9900394	A1	19990107	WO 1998-GB1854	19980624
	W: GB, JP, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	GB 2342351	A1	20000412	GB 1999-27551	19980624
	GB 2342351	B2	20010822		
	EP 993462	A1	20000419	EP 1998-930943	19980624
	R: AT, BE, CH, DE, DK, ES, FR, GB, IT, LI, NL, SE, PT, IE, FI				
	JP 2001515515	T2	20010918	JP 1999-505375	19980624
	US 6326394	B1	20011204	US 2000-446458	20000630
PRAI	GB 1997-13292	A	19970625		
	WO 1998-GB1854	W	19980624		
OS	MARPAT 130:110288				
AB	R1ZR2 [R1,R2 = phenolic H-removed calixarene residues; Z = O to O-bridging (CH2)2-6 or (CH2CH2O)nCH2CH2; n = 1-5] were prep'd. Thus, calix[4]arene was condensed with a calix[4]arenetetrakis(2-tosyloxyethyl) ether deriv. Data for characterization and properties of the prep'd. comp'd. were given.				
ST	calixarene tube prep'n cation receptor				
IT	Alkali metal complexes				
	Cyclophanes				
	RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)				
IT	197579-72-9P				
	RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)				
	(prep'n. of calixarene tubes as cation receptors)				
IT	60705-62-6 145307-27-3				
	RL: RCT (Reactant)				
	(prep'n. of calixarene tubes as cation receptors)				

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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L7 ANSWER 6 OF 14 CA COPYRIGHT 2002 ACS

AN 130:75219 CA

TI Carbonylation (hydroformylation and hydrocarbalkoxylation) reactions in the presence of transition metal: p-tert-butyl-calix[4]arene-based phosphine and phosphinite systems

AU Csok, Zsolt; Szalontai, Gabor; Czira, Gabor; Kollar, Laszlo

CS Department of Silicate and Materials Engineering, University of Veszprem, Veszprem, H-8200, Hung.

SO J. Organomet. Chem. (1998), 570(1), 23-29

CODEN: JORCAI; ISSN: 0022-328X

PB Elsevier Science S.A.

DT Journal

LA English

CC 78-7 (Inorganic Chemicals and Reactions)

Section cross-reference(s): 25, 29, 67

AB 5,11,17,23-Tetra-tert-butyl-25,26,27,28-tetrakis(2-diphenylphosphinoxy-ethoxy)calix[4]arene (5) and 5,11,17,23-tetra-tert-butyl-25,26,27,28-tetrakis(2-diphenylphosphinoethoxy)calix[4]arene (6), as well as their platinum and palladium complexes (PtCl₂)₂(5), (PdCl₂)₂(5) were synthesized and characterized. In addn. to these transition metal-contg. complexes the catalytic systems formed in situ, from catalytic precursors PtCl₂(PhCN)₂, [Rh(nbd)Cl]₂ and PdCl₂(PhCN)₂ and the corresponding calixarene ligand, were tested as catalysts in hydroformylation and hydrocarbalkoxylation, resp. High chemoselectivity was obtained in hydroformylation in the presence of rhodium-contg. catalysts both with the above calixarene-based phosphine and phosphinite ligands. The

regioselectivity towards branched aldehyde shows a strong temp. dependence in case of phosphinite deriv. Although the platinum-contg. systems show much lower catalytic activity, the regioselectivities are undoubtedly higher than those obtained with PtCl₂(diphosphine)-SnCl₂ systems.

ST transition metal calixarene phosphine phosphinite complex prepn
carbonylation catalyst; hydroformylation catalyst regioselective chemoselective rhodium platinum calixarene phosphine phosphinite; hydrocarbalkoxylation catalyst palladium calixarene phosphine phosphinite complex prepn

IT Carbonylation
(hydrocarbalkoxylation; of styrene in presence of rhodium, palladium and platinum phosphinoethoxy- and phosphinoxyethoxy-calix[4]arene complex hydroformylation or hydrocarbalkoxylation catalysts)

IT Carbonylation catalysts
(hydrocarbalkoxylation; prepn. and catalytic activity for hydroformylation or hydrocarbalkoxylation of styrene of rhodium, platinum and palladium phosphinoethoxy- and phosphinoxyethoxy-calix[4]arene complexes)

IT Transition metal calixarene complexes
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(prepn. and catalytic activity for hydroformylation or hydrocarbalkoxylation of styrene of rhodium, platinum and palladium phosphinoethoxy- and phosphinoxyethoxy-calix[4]arene complexes)

IT Hydroformylation
(regioselective; of styrene in presence of rhodium and platinum phosphinoethoxy- and phosphinoxyethoxy-calix[4]arene complex chemoselective and regioselective hydroformylation catalysts)

IT Hydroformylation catalysts
(regioselective; prepn. and catalytic activity for hydroformylation or hydrocarbalkoxylation of styrene of rhodium, platinum and palladium phosphinoethoxy- and phosphinoxyethoxy-calix[4]arene complexes)

IT Chemoselectivity
(towards aldehydes in hydroformylation of styrene in presence of rhodium and platinum phosphinoethoxy- and phosphinoxyethoxy-calix[4]arene complex hydroformylation or hydrocarbalkoxylation catalysts)

IT 12257-42-0, Chloro(norbornadiene)rhodium dimer 14873-63-3, Bis(benzonitrile)dichloroplatinum
RL: CAT (Catalyst use); RCT (Reactant); USES (Uses)
(catalyst precursor for chemoselective and regioselective hydroformylation of styrene)

IT 14220-64-5, Bis(benzonitrile)dichloropalladium
RL: CAT (Catalyst use); RCT (Reactant); USES (Uses)
(catalyst precursor for hydrocarbalkoxylation of styrene)

IT 100-42-5, reactions
RL: RCT (Reactant)
(catalytic activity for hydroformylation or hydrocarbalkoxylation of styrene of rhodium, platinum and palladium phosphinoethoxy- and phosphinoxyethoxy-calix[4]arene complexes)

IT 1079-66-9, Chlorodiphenylphosphine
RL: RCT (Reactant)
(for prepn. of (phosphinoethoxy)calix[4]arene)

IT **145307-27-3**
RL: RCT (Reactant)
(for prepn. of (phosphinoethoxy)calix[4]arene and its transition metal complexes as carbonylation catalysts)

IT 4541-02-0, (Diphenylphosphino)lithium
RL: RCT (Reactant)
(for prepn. of (phosphinoxyethoxy)calix[4]arene)

IT **145307-26-2**
RL: RCT (Reactant)
(for prepn. of (phosphinoxyethoxy)calix[4]arene and its transition metal complexes as carbonylation catalysts)

IT 100-41-4P, Ethylbenzene, preparation
RL: BYP (Byproduct); PREP (Preparation)
(formation in hydroformylation of styrene using rhodium or palladium

phosphinoxyethoxy- or phosphinoethoxy-calix[4]arene catalysts)

IT 218299-90-2P
 RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation);
 USES (Uses)
 (prepn. and catalytic activity for chemoselective and regioselective
 hydroformylation of styrene)

IT 218299-97-9P
 RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation);
 USES (Uses)
 (prepn. and catalytic activity for hydrocarbalkoxylation of styrene)

IT 172910-72-4P 218300-17-5P
 RL: CAT (Catalyst use); RCT (Reactant); SPN (Synthetic preparation); PREP
 (Preparation); USES (Uses)
 (prepn. and complexation with rhodium, palladium and platinum as
 carbonylation catalyst precursor)

IT 103-25-3P, Methyl 3-phenylpropionate 2901-11-3P, tert-Butyl
 2-phenylpropionate 16537-10-3P, tert-Butyl 3-phenylpropionate
 31508-44-8P, Methyl 2-phenylpropionate
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (prepn. by hydrocarbalkoxylation of styrene using palladium
 phosphinoxyethoxy- or phosphinoethoxy-calix[4]arene catalysts)

IT 93-53-8P, 2-Phenylpropanal 104-53-0P, 3-Phenylpropanal
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (prepn. by hydroformylation of styrene using rhodium or palladium
 phosphinoxyethoxy- or phosphinoethoxy-calix[4]arene catalysts)

RE.CNT 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD

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AN 129:127676 CA
 TI Calixarenes Derivatized with Sulfur-Containing Functionalities as
 Selective Extractants for Heavy and Precious Metal Ions
 AU Yordanov, Alexander T.; Whittlesey, Bruce R.; Roundhill, D. Max
 CS Dept. of Chemistry, Texas Tech. Univ., Lubbock, TX, USA
 SO Inorg. Chem. (1998), 37(14), 3526-3531
 CODEN: INOCAJ; ISSN: 0020-1669
 PB American Chemical Society
 DT Journal
 LA English
 CC 68-2 (Phase Equilibria, Chemical Equilibria, and Solutions)
 Section cross-reference(s): 25, 75
 AB The calix[4]arenes 5,11,17,23-tert-butyl-25,26,27,28-(2-
 methylthioethoxy)calix[4]arene, 25,26,27,28-(2-
 methylthioethoxy)calix[4]arene, and 5,11,17,23-tert-butyl-25,26,27,28-(2-
 (2-thiophenecarboxy)ethoxy)calix[4]arene were prep'd. The structure of
 25,26,27,28-(2-methylthioethoxy)calix[4]arene was verified by x-ray
 crystallog. The crystals with the empirical formula C₄₀H₄₈O₄S₄ are
 monoclinic space group C2/c with a 20.428(2), b 10.581(1), c 20.445(2)
 .ANG., .beta. 118.461(5).degree., Z = 4. These calix[4]arenes are
 effective extractants for transferring heavy metal ions from aq. soln.
 into chloroform. The extn. of Sn(II), Hg(II), Ag(I), Pd(II), Au(III),
 MeHg(II), Pb(II) and Cd(II) into chloroform with these calix[4]arenes is
 compared with that performed with 5,11,17,23-tert-butyl-25,26,27,28-(2-N,N-
 dimethyldithiocarbamoylethoxy)calix[4]arene, 25,26,27,28-(2,N,N-
 dimethyldithiocarbamoylethoxy)calix[4]arene, and 5,11,17,23-tert-butyl-
 25,26,27,28-(2-mercaptoethoxy)calix[4]arene.
 ST calixarene thioethoxy thiophenecarboxy prepn metal extn; heavy metal extn
 thioethoxycalixarene thiophenecarboxycalixarene
 thiocarbamoylethoxycalixarene; thiophenecarboxycalixarene prepn heavy
 metal extn; thioethoxycalixarene prepn structure heavy metal extn; crystal
 structure thioethoxycalixarene
 IT Crystal structure
 Molecular structure
 (of (thioethoxy)calix[4]arene extractant for heavy and precious metal
 ions)
 IT Extractants
 Extraction
 (prepn. of calix[4]arenes with sulfur-contg. functionalities for extn.
 of heavy and precious metal ions)
 IT 7439-92-1, Lead, processes 7439-97-6, Mercury, processes 7440-05-3,
 Palladium, processes 7440-22-4, Silver, processes 7440-31-5, Tin,
 processes 7440-43-9, Cadmium, processes 7440-57-5, Gold, processes
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (extn. of heavy and precious metals using calix[4]arenes with
 sulfur-contg. functionalities)
 IT 169561-46-0 169561-47-1 185385-78-8
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (for extn. of heavy and precious metal ions)
 IT 5188-07-8, Sodium thiomethoxide 5271-67-0, 2-Thiophene carbonyl chloride
 145307-26-2, 5,11,17,23-tert-Butyl-25,26,27,28-(2-
 hydroxyethoxy)calix[4]arene 169561-43-7, 5,11,17,23-tert-Butyl-
 25,26,27,28-(2-bromoethoxy)calix[4]arene 185385-77-7,
 25,26,27,28-(2-Bromoethoxy)calix[4]arene
 RL: RCT (Reactant)
 (for prepn. of calix[4]arenes with sulfur-contg. functionalities for
 extn. of heavy and precious metal ions)
 IT 204908-29-2P
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); SPN
 (Synthetic preparation); PREP (Preparation); PROC (Process)
 (prepn. and crystal structure for extn. of heavy and precious metal
 ions)
 IT 145237-26-9P 210285-59-9P
 RL: PEP (Physical, engineering or chemical process); SPN (Synthetic
 preparation); PREP (Preparation); PROC (Process)
 (prepn. for extn. of heavy and precious metal ions)

AN 129:22700 CA

TI Chemical microsensors for detection of explosives and chemical warfare agents

IN Yang, Xiaoguang; Swanson, Basil I.

PA Regents of the University of California, USA; Yang, Xiaoguang; Swanson, Basil I.

SO PCT Int. Appl., 37 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM G01N005-04

CC 80-2 (Organic Analytical Chemistry)

Section cross-reference(s): 50

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9822795	A1	19980528	WO 1997-US21519	19971121
	W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	AU 9855887	A1	19980610	AU 1998-55887	19971121
	US 6316268	B1	20011113	US 1999-308460	19990517
PRAI	US 1996-31643	P	19961122		
	US 1997-50215	P	19970619		
	WO 1997-US21519	W	19971121		
AB	An article of manuf. is provided including a substrate having an oxide surface layer and a layer of a cyclodextrin deriv. chem. bonded to said substrate, said layer of a cyclodextrin deriv. adapted for the inclusion of selected compds., e.g., nitro-contg. org. compds., therewith. Such an article can be a chem. microsensor capable of detecting a resultant mass change from inclusion of the nitro-contg. org. compd.				
ST	microsensor explosive chem warfare agent				
IT	Chemical warfare agents				
	Explosives				
	Microsensors				
	(chem. microsensors for detection of explosives and chem. warfare agents)				
IT	Organophosphorus compounds				
	RL: ANT (Analyte); ANST (Analytical study)				
	(explosives and chem. warfare agents detn. by SAW microsensors)				
IT	Electronic device fabrication				
	(fabrication of covalent bonded cyclodextrin-siloxane polymer thin film on SAW device)				
IT	Monolayers				
	Surface acoustic wave devices				
	Transducers				
	(monolayer formation of heptakis(2-O-methyl)-.beta.-cyclodextrin on SAW transducer with siloxane linker)				
IT	Complexation				
	Piezoelectric materials				
	Surface acoustic wave sensors				
	(nitro-contg. org. compds. detection in environment by sensor with oxide layer and layer of cyclodextrin deriv. chem. bonded to substrate and adapted for inclusion of selected compds.)				
IT	Nitro compounds				
	RL: ANT (Analyte); ANST (Analytical study)				
	(nitro-contg. org. compds. detection in environment by sensor with oxide layer and layer of cyclodextrin deriv. chem. bonded to substrate and adapted for inclusion of selected compds.)				
IT	Oxides (inorganic), analysis				
	RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST				

(Analytical study); USES (Uses)
 (nitro-contg. org. compds. detection in environment by sensor with
 oxide layer and layer of cyclodextrin deriv. chem. bonded to substrate
 and adapted for inclusion of selected compds.)

IT Polysiloxanes, uses
 RL: DEV (Device component use); USES (Uses)
 (reaction products with cyclodextrin derivs.; fabrication of covalent
 bonded cyclodextrin-siloxane polymer thin film on SAW device)

IT 88-72-2, o-Nitrotoluene 98-95-3, Nitrobenzene, analysis 127-18-4,
 Perchloroethylene, analysis 693-07-2, 2-Chloroethyl ethyl sulfide
 756-79-6, DMMP 51360-33-9
 RL: ANT (Analyte); ANST (Analytical study)
 (explosives and chem. warfare agents detn. by SAW microsensors)

IT 9016-00-6D, Di-Me siloxane, SRU, reaction products with cyclodextrin
 derivs. 31900-57-9D, Dimethylsilanediol homopolymer, reaction products
 with cyclodextrin derivs. 207395-15-1D, reaction products with
 polysiloxanes
 RL: DEV (Device component use); USES (Uses)
 (fabrication of covalent bonded cyclodextrin-siloxane polymer thin film
 on SAW device)

IT 18817-29-3 52217-52-4, 7-Octenyltrichlorosilane
 RL: RCT (Reactant)
 (fabrication of covalent bonded cyclodextrin-siloxane polymer thin film
 on SAW device)

IT 17947-99-8
 RL: RCT (Reactant)
 (monolayer formation of heptakis(2-O-methyl)-.beta.-cyclodextrin on SAW
 transducer with siloxane linker)

IT 3344-77-2
 RL: RCT (Reactant)
 (monolayer formation of hexakis(2-O-benzyl)-.alpha.-cyclodextrin on SAW
 transducer with ether linker)

IT 12619-70-4D, Cyclodextrin, derivs.
 RL: ARG (Analytical reagent use); DEV (Device component use); ANST
 (Analytical study); USES (Uses)
 (nitro-contg. org. compds. detection in environment by sensor with
 oxide layer and layer of cyclodextrin deriv. chem. bonded to substrate
 and adapted for inclusion of selected compds.)

IT 60786-23-4P, Heptakis(2-O-methyl)-.beta.-cyclodextrin 123154-93-8P,
 Hexakis(2-O-methyl)-.alpha.-cyclodextrin 123155-01-1P 123155-05-5P,
 Heptakis(2,3-di-O-methyl)-.beta.-cyclodextrin 123155-20-4P,
 Heptakis(2-O-benzyl)-.beta.-cyclodextrin **145307-26-2P**
 161178-32-1P 161636-48-2P, Heptakis(2,3-di-O-benzyl)-.beta.-cyclodextrin
 207395-12-8P
 RL: ARU (Analytical role, unclassified); DEV (Device component use); SPN
 (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES
 (Uses)
 (nitro-contg. org. compds. detection in environment by sensor with
 oxide layer and layer of cyclodextrin deriv. chem. bonded to substrate
 and adapted for inclusion of selected compds.)

IT 74-88-4, Methyl iodide, reactions 100-44-7, Benzyl chloride, reactions
 107-15-3, 1,2-Ethanediamine, reactions 2695-48-9, 8-Bromo-1-octene
 7585-39-9, .beta.-Cyclodextrin 7646-69-7, Sodium hydride 9004-73-3,
 Poly(methylhydrosiloxane) 10016-20-3, .alpha.-Cyclodextrin 16949-15-8,
 Lithium borohydride 26628-22-8, Sodium azide 97600-39-0 122566-69-2,
 Heptakis(2-O-tosyl)-.beta.-cyclodextrin 123155-03-3,
 Heptakis(6-O-tert-butyltrimethylsilyl)-.beta.-cyclodextrin
 RL: RCT (Reactant)
 (nitro-contg. org. compds. detection in environment by sensor with
 oxide layer and layer of cyclodextrin deriv. chem. bonded to substrate
 and adapted for inclusion of selected compds.)

IT 84216-71-7P, Mono(2-O-tosyl)-.beta.-cyclodextrin 146469-71-8P,
 Hexakis(2-O-tosyl)-.alpha.-cyclodextrin 155635-16-8P,
 Mono(2-ethylenediamine)-.beta.-cyclodextrin 207395-11-7P 207395-13-9P,
 Hexakis(2-O-azido)-.alpha.-cyclodextrin 207395-14-0P 207395-15-1P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
 (nitro-contg. org. compds. detection in environment by sensor with

oxide layer and layer of cyclodextrin deriv. chem. bonded to substrate and adapted for inclusion of selected compds.)

IT 9004-73-3DP, Poly(methylhydrosiloxane), reaction products with heptakis(2,3-di-O-methyl-6-O-8-octene-1-enyl)-.beta.-cyclodextrin 84216-71-7DP, lanthanide complexes

RL: SPN (Synthetic preparation); PREP (Preparation)
(nitro-contg. org. compds. detection in environment by sensor with oxide layer and layer of cyclodextrin deriv. chem. bonded to substrate and adapted for inclusion of selected compds.)

IT 112-92-5, 1-Octadecanol 3069-42-9, Octadecyltrimethoxysilane 83048-65-1

RL: DEV (Device component use); USES (Uses)
(self assembled monolayer formation of long alkyl chains on SAW transducer with siloxane or ether linkages)

L7 ANSWER 9 OF 14 CA COPYRIGHT 2002 ACS

AN 127:318947 CA

TI Calix[4]tube: a tubular receptor with remarkable potassium ion selectivity

AU Schmitt, Philippe; Beer, Paul D.; Drew, Michael G. B.; Scheen, Paul D.

CS Inorganic Chemistry Laboratory, University of Oxford, Oxford, OX1 3QR, UK

SO Angew. Chem., Int. Ed. Engl. (1997), 36(17), 1840-1842
CODEN: ACIEAY; ISSN: 0570-0833

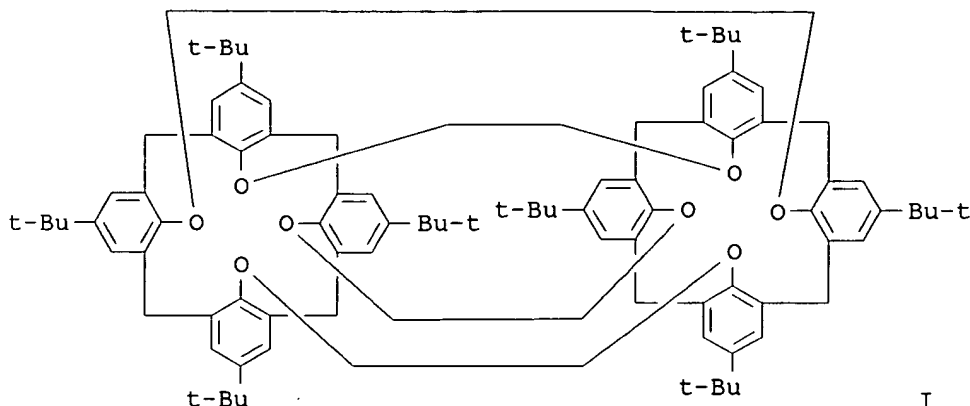
PB Wiley-VCH

DT Journal

LA English

CC 28-23 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 75, 78

GI



AB The title compd. (I) was prepd. by condensing p-tert-butylcalix[4]arene with its pertosyloxyethyl deriv. I reacts with K₂CO₃ in H₃CCN to form a 1:1 complex whose crystal structure is reported. The K ion is located at the center of a slightly flattened cube formed by the OCH₂CH₂O bridges.

ST calixarene tubular prepn potassium complexation; crystal structure tubular calixarene potassium complex; mol structure tubular calixarene potassium complex

IT Molecular mechanics
(calcs. for K⁺ uptake by tubular calixarene)

IT Conformation
Crystal structure
Molecular structure
(of a tubular calixarene and its K complex)

IT Potassium channel
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(tubular calixarene as model for)

IT 197579-75-2P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(crystal structure; prepn. and K complexation of a tubular calixarene)

IT 197579-72-9P
 RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
 (prepn. and K complexation of a tubular calixarene)

IT 197579-73-0P 197579-74-1P
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (prepn. and K complexation of a tubular calixarene)

IT 60705-62-6, p-tert-Butylcalix[4]arene **145307-27-3**
 RL: RCT (Reactant)
 (prepn. and K complexation of a tubular calixarene)

L7 ANSWER 10 OF 14 CA COPYRIGHT 2002 ACS
 AN 124:353851 CA
 TI Chemically modified calix[4]arenes as selective complexants for heavy metal ions: comparison with crowns and thiocrowns
 AU Yordanov, Alex T.; Roundhill, D. Max
 CS Department of Chemistry, Tulane Univ., New Orleans, LA, 70118, USA
 SO New J. Chem. (1996), 20(4), 447-451
 CODEN: NJCHE5; ISSN: 1144-0546
 DT Journal
 LA English
 CC 68-2 (Phase Equilibriums, Chemical Equilibriums, and Solutions)
 Section cross-reference(s): 25

AB The two lower rim functionalized calixarenes 5,11,17,23-tetra-tert-butyl-25,26,27,28-tetra(2-N,N-dimethyldithiocarbamoylethoxy)calix[4]arene (I) and 5,11,17,23-tetra-tert-butyl-25,26,27,28-tetra(2-mercaptoethoxy)calix[4]arene (II), are effective extractants for Hg²⁺, Hg₂₂⁺, Ag⁺ and Au³⁺, but not for Pb²⁺, Cd²⁺, Cd₂⁺, Ni²⁺ and Pt²⁺. For MeHg⁺ II is an effective extractant, but I is relatively ineffective. The emerging role of calixarenes as selective complexants for metal ions is discussed in context with other complexants such as chelate, macrocyclic and lariat ether ligands.

ST lower rim calixarene prep metal extn
 IT Extraction
 (prepn. of lower rim functionalized calix[4]arenes and their use as selective complexants for heavy metal ions, crowns and thiocrowns in relation to)

IT Metals, processes
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (heavy, prep. of lower rim functionalized calix[4]arenes and their use as selective complexants for heavy metal ions, crowns and thiocrowns in relation to)

IT Cyclophanes
 RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); USES (Uses)
 (meta-, prep. of lower rim functionalized calix[4]arenes and their use as selective complexants for heavy metal ions, crowns and thiocrowns in relation to)

IT **145307-27-3P**
 RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation)
 (in prep. of lower rim functionalized calix[4]arenes)

IT 128-04-1, Sodium N,N-dimethyldithiocarbamate 10387-40-3, Potassium thioacetate
 RL: RCT (Reactant)
 (in prep. of lower rim functionalized calix[4]arenes)

IT 169561-46-0P 169561-47-1P
 RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); USES (Uses)
 (prepn. of lower rim functionalized calix[4]arenes and their use as selective complexants for heavy metal ions, crowns and thiocrowns in relation to)

IT 12596-26-8, Mercury dimer ion(hg₂₂⁺), processes 14302-87-5, processes 14701-21-4, Silver, ion(ag⁺), processes 16065-91-1, Gold, ion(au₃⁺), processes 22967-92-6
 RL: PEP (Physical, engineering or chemical process); PROC (Process)

(prepn. of lower rim functionalized calix[4]arenes and their use as selective complexants for heavy metal ions, crowns and thiacrowns in relation to)

IT 169561-43-7P 177191-42-3P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)

(prepn. of lower rim functionalized calix[4]arenes and their use as selective complexants for heavy metal ions, crowns and thiacrowns in relation to)

L7 ANSWER 11 OF 14 CA COPYRIGHT 2002 ACS

AN 124:213117 CA

TI Solvent extraction of divalent palladium and platinum from aqueous solutions of their chloro complexes using an N,N-dimethyldithiocarbamoylethoxy substituted calix[4]arene

AU Yordanov, Alexander T.; Mague, Joel T.; Roundhill, D. Max

CS Department of Chemistry, Tulane University, New Orleans, LA, 70118, USA

SO Inorg. Chim. Acta (1995), 240(1-2), 441-6

CODEN: ICHAA3; ISSN: 0020-1693

DT Journal

LA English

CC 68-2 (Phase Equilibriums, Chemical Equilibriums, and Solutions)

Section cross-reference(s): 75

AB The compd. 5,11,17,23-tetra-tert-butyl-25,26,27,28-tetra-(2-bromoethoxy)calix[4]arene has been prepd. by first converting 5,11,17,23-tetra-tert-butyl-25,26,27,28-tetra-(2-hydroxyethoxy)calix[4]arene into the tosylate, and then to the product by reaction with LiBr. The compd. crystal structure was detd. The final R value for 2391 unique reflections was 0.061. The compd. reacts with excess sodium N,N-dimethyldithiocarbamate to give 5,11,17,23-tetra-tert-butyl-25,26,27,28-tetra-(2-N,N-dimethyldithiocarbamoyl-ethoxy)calix[4]arene. This compd. is an effective extractant for transferring palladium(II) from an aq. to a chloroform phase. No extn. of PtCl₄²⁻ is obsd. under thermal conditions. Under photochem. conditions using a mixt. of PtCl₄²⁻ and PtCl₆²⁻, extn. of platinum into the chloroform layer is obsd. An explanation for this observation is given.

ST extn palladium platinum aq chlorocomplex calixarene

IT Molecular structure

(of calixarene complexes used in solvent extn. of bivalent palladium and platinum from chloro-complexes and of related complexes formed in extn.)

IT 169561-43-7P

RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)

(extn. of bivalent palladium or platinum from chloro-complex solns. by)

IT **145307-26-2**

RL: RCT (Reactant)

(in prepn. of 5,11,17,23-tetra-tert-butyl-25,26,27,28-tetra-(2-bromoethoxy)calix[4]arene used in solvent extn. of bivalent metals)

IT 7440-06-4, Platinum, properties

RL: PRP (Properties); REM (Removal or disposal); PROC (Process)

(solvent extn. of bivalent, from aq. chloro complex solns., by a calix[4]arene)

IT 7440-05-3, Palladium, properties

RL: PRP (Properties); REM (Removal or disposal); PROC (Process)

(solvent extn. of bivalent, from aq. chloro-complex solns., by a calix[4]arene)

IT 7440-05-3D, Palladium, chloro complexes 7440-06-4D, Platinum, chloro complexes

RL: PRP (Properties); REM (Removal or disposal); PROC (Process)

(solvent extn. of, by a calix[4]arene)

IT 67-66-3, Chloroform, reactions

RL: RCT (Reactant)

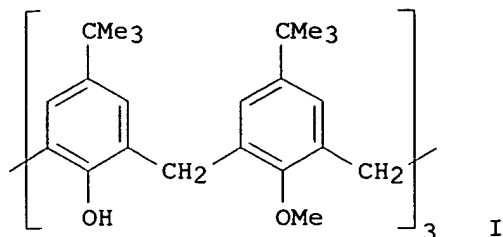
(transfer of palladium(II) from aq. to a soln. of, using a calix[4]arene)

L7 ANSWER 12 OF 14 CA COPYRIGHT 2002 ACS

AN 124:176266 CA

TI Calix[n]arene phosphine oxides. A new series of cation receptors for extraction of europium, thorium, plutonium and americium in nuclear waste treatment
 AU Malone, John F.; Marrs, Debbie J.; McKervey, M. Anthony; O'Hagan, Paul; Thompson, Norris; Walker, Andrew; Arnaud-Neu, Françoise; Mauprivez, Oliver; Schwing-Weill, Marie-Jose; et al.
 CS Sch. Chem., Queen's Univ., Belfast, BT9 5AG, UK
 SO J. Chem. Soc., Chem. Commun. (1995), (20), 2151-3
 CODEN: JCCCAT; ISSN: 0022-4936
 DT Journal
 LA English
 CC 29-7 (Organometallic and Organometalloidal Compounds)
 Section cross-reference(s): 25, 71, 75
 GI For diagram(s), see printed CA Issue.
 AB A novel class of calixarene derivs. with phosphine oxide residues [calix-(OCH₂CH₂POPh₂)_n], e.g., I, attached to the lower rim showing high efficiency in extn. of EuIII, ThIV, PuIV, and AmIV from simulated nuclear waste is reported. The crystal structure of I was detd.
 ST phosphinylethoxycalixarene prepn nuclear waste extn; plutonium extn phosphinylethoxycalixarene; americium extn phosphinylethoxycalixarene; thorium extn phosphinylethoxycalixarene; europium extn phosphinylethoxycalixarene; crystal structure phosphinylethoxycalixarene; mol structure phosphinylethoxycalixarene
 IT Crystal structure
 Molecular structure
 (of phosphinylethoxycalixarene)
 IT Radioactive wastes
 (phosphinylethoxycalixarenes for extn. of metals from)
 IT 171979-66-1P
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (crystal structure; prepn. of calix[n]arene phosphine oxides for extn. of europium, thorium, plutonium and americium from nuclear wastes)
 IT 92003-62-8 92003-63-9 97600-39-0 97600-43-6 97600-45-8
 97600-47-0
 RL: RCT (Reactant)
 (prepn. of calix[n]arene phosphine oxides for extn. of europium, thorium, plutonium and americium from nuclear wastes)
 IT **145307-26-2P 145307-27-3P** 163836-78-0P 163836-79-1P
 163836-80-4P 163836-81-5P 163836-82-6P 172910-72-4P 172910-73-5P
 172910-74-6P 172910-75-7P 172910-76-8P 172910-77-9P 172910-78-0P
 172910-79-1P 172910-80-4P 172910-81-5P 172910-82-6P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
 (prepn. of calix[n]arene phosphine oxides for extn. of europium, thorium, plutonium and americium from nuclear wastes)
 IT 7440-07-5, Plutonium, processes 7440-29-1, Thorium, processes
 7440-35-9, Americium, processes 7440-53-1, Europium, processes
 RL: REM (Removal or disposal); PROC (Process)
 (prepn. of calix[n]arene phosphine oxides for extn. of europium, thorium, plutonium and americium from nuclear wastes)
 IT 172910-67-7P 172910-68-8P 172910-69-9P 172910-70-2P 172910-71-3P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (prepn. of calix[n]arene phosphine oxides for extn. of europium, thorium, plutonium and americium from nuclear wastes)
 L7 ANSWER 13 OF 14 CA COPYRIGHT 2002 ACS
 AN 123:9104 CA
 TI Synthesis and Structural Characterization of Calix[4]arenes, Calix[6]arenes, and Calix[8]arenes with 3-Hydroxypropoxy or 2-Hydroxyethoxy Functional Groups Appended onto the Lower Rim
 AU Moran, Justin K.; Georgiev, Emil M.; Yordanov, Alex T.; Mague, Joel T.; Roundhill, D. Max
 CS Department of Chemistry, Tulane University, New Orleans, LA, 70118, USA
 SO J. Org. Chem. (1994), 59(20), 5990-8
 CODEN: JOCEAH; ISSN: 0022-3263
 DT Journal
 LA English
 CC 25-7 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)

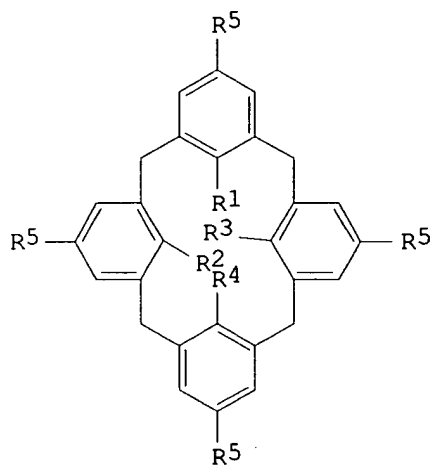
GI



- AB The compd. 5,11,17,23,29,35-hexa-tert-butyl-37,39,41-trihydroxy-38,40,42-trimethoxycalix[6]arene (I) has been prepd. by treating 5,11,17,23,29,35-hexa-tert-butylcalix[6]arene with potassium carbonate, followed by Me p-toluenesulfonate. The analogous reaction with the unsubstituted calix[6]arene gives 37,38,39-trihydroxy-40,41,42-trimethoxycalix[6]arene (II). Treating I or 5,11,17,23-tetra-tert-butyl-25,27-dihydroxy-26,28-dimethoxycalix[4]arene with sodium hydride, followed by allyl bromide, gives 5,11,17,23,29,35-hexa-tert-butyl-37,39,41-tris(allyloxy)-38,40,42-trimethoxycalix[6]arene (III) or 5,11,17,23-tetra-tert-butyl-25,27-bis(allyloxy)-26,28-dimethoxycalix[4]arene (IV), resp. III and IV react with BH₃, followed by H₂O₂, to give 5,11,17,23,29,35-hexa-tert-butyl-37,39,41-tris(3-hydroxypropoxy)-38,40,42-trimethoxycalix[6]arene and 5,11,17,23-tetra-tert-butyl-25,27-bis(3-hydroxypropoxy)-26,28-dimethoxycalix[4]arene, resp. A general procedure for the synthesis of 2-hydroxyethoxy-substituted calixarenes involves redn. of the corresponding Et calixaryl acetates with LiAlH₄. The procedure has been used to synthesize 5,11,17,23-tetra-tert-butyl-25,26,27,28-tetrakis(2-hydroxyethoxy)calixarene, 25,26,27,28-tetra(2-hydroxyethoxy)calix[4]arene (V), 5,11,17,23,29,35-hexa-tert-butyl-37,38,39,40,41,42-hexakis(2-hydroxyethoxy)calix[6]arene (VI), 37,38,39,40,41,42-hexa(2-hydroxyethoxy)calix[6]arene, 5,11,17,23,29,35,41,47-octa-tert-butyl-49,50,51,52,53,54,55,56-octakis(2-hydroxyethoxy)calix[8]arene, and 49,50,51,52,53,54,55,56-octakis(2-hydroxyethoxy)calix[8]arene. Compds. II, III, IV, V, and VI have been characterized by x-ray crystallog. The conformations of the tetrols, hexols, and octols have been computationally explored using mol. mechanics calcns.
- ST calixarene hydroxyalkoxy deriv prepn x ray; conformation calixarene polyol mol mechanics; crystal structure calixarene hydroxyalkoxy deriv
- IT Conformation and Conformers
Crystal structure
Molecular mechanics
Molecular structure
(of calixarene hydroxyalkoxy derivs.)
- IT 122406-45-5
RL: RCT (Reactant)
(allylation of)
- IT 78092-53-2 96107-95-8
RL: RCT (Reactant)
(methylation of)
- IT 138709-55-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and allylation of)
- IT **145307-26-2P** 163836-80-4P 163836-81-5P 163836-82-6P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and mol. mechanics calcns. for)
- IT 149507-83-5P 163836-76-8P 163836-77-9P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)
- IT 156746-92-8P 163836-75-7P
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP

(Preparation)
 (prepn., x-ray anal., and hydroboration-oxidn. of)
 IT 163836-78-0P 163836-79-1P
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (prepn., x-ray anal., and mol. mechanics calcns. for)
 IT 92003-62-8 92003-63-9 97600-39-0 97600-43-6 97600-45-8
 97600-47-0
 RL: RCT (Reactant)
 (redn. of)

L7 ANSWER 14 OF 14 CA COPYRIGHT 2002 ACS
 AN 118:124176 CA
 TI Transduction of selective recognition of heavy metal ions by chemically
 modified field effect transistors (CHEMFETs)
 AU Cobben, Peter L. H. M.; Egberink, Richard J. M.; Bomer, Johan G.;
 Bergveld, Piet; Verboom, Willem; Reinhoudt, David N.
 CS Lab. Org. Chem., Univ. Twente, Enschede, 7500 AE, Neth.
 SO J. Am. Chem. Soc. (1992), 114(26), 10573-82
 CODEN: JACSAT; ISSN: 0002-7863
 DT Journal
 LA English
 CC 25-29 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
 Section cross-reference(s): 76
 GI



AB Specifically substituted calix[4]arenes that complex selectively silver I
 (R1 = R3 = OCH₂CH₂SMe, R2 = R4 = OH, R5 = CMe₃) (II), copper I [(R1-R4 =
 OCH₂CH₂SC(S)NET₂, R5 = CMe₃) (III), cadmium I [R1-R4 =
 OCH₂CH₂OCH₂C(S)NMe₂, R5 = CMe₃] (IV), and lead I [R1-R4 = OCH₂C(S)NMe₂, R5
 = CMe₃] (V) cations were synthesized via di- and tetraalkylation of
 p-tert-butylcalix[4]arene. Calix[4]arenes derivatized with thioether,
 thioamide, and dithiocarbamoyl functionalities could be obtained in high
 overall yields. Integrated on a chem. modified field effect transistor
 (CHEMFET) the selective complexation of heavy metal ions by these
 calix[4]arenes is transduced directly into an elec. signal. An
 architecture for CHEMFETs is used in which a hydrophilic polyHEMA hydrogel
 is covalently attached between the gate oxide surface of a modified ISFET
 and the hydrophobic sensing membrane that contains the receptor mol.
 CHEMFETs based on the calix[4]arene (II) with two diametrically
 substituted thioether functionalities responded selectively (60 mV
 decade⁻¹) to a change in silver activity in the aq. soln. in the presence
 of potassium, calcium, cadmium, and copper ions (log K_{i,j} .ltoreq. -4).
 The selectivity toward mercury (log K_{i,j} = -2.7) is comparable to the best
 neutral carrier based ISE so far. The calix[4]arene III, with four
 dithiocarbamoyl groups, incorporated in a CHEMFET responded Nernstian (30

mV decade⁻¹) to a change in copper activity. The calix[4]arene IV, which has four dimethylthiocarbamoylmethoxyethoxy substituents, was selective in a CHEMFET (30 mV decade⁻¹) toward cadmium in the presence of calcium and potassium ions. Two classes of ionophores can be distinguished for the selective detection of lead(II) cations by CHEMFETs, oxamide and thioamide ionophores, resp. Tetrasubstitution of the calix[4]arene with thioamide groups V is a prerequisite for the selective detection of lead and leads to a highly selective CHEMFET (log K_{i,j} = -3.4 to -5.2).

ST cadmium selective FET calixarene complex; silver selective FET calixarene complex; copper selective FET calixarene complex; calixarene complex metal selective FET; metal selective metacyclophane complex FET

IT Transistors
(field-effect, cadmium-selective, calixarene derivs. for)

IT Transistors
(field-effect, copper-selective, calixarene derivs. for)

IT Transistors
(field-effect, silver-selective, calixarene derivs. for)

IT Cyclophanes
RL: PRP (Properties)
(meta-, metal complexing by, in chem. modified field effect transistors)

IT 105-36-2, Ethyl bromoacetate
RL: RCT (Reactant)
(alkylation by, of calixarene deriv.)

IT 542-81-4, 2-Chloroethyl methyl sulfide 2675-89-0, N,N-Dimethyl-2-chloroacetamide
RL: RCT (Reactant)
(alkylation by, of calixarene derivs.)

IT 60705-62-6 145237-29-2
RL: RCT (Reactant)
(alkylation of, by chloroethyl Me sulfide)

IT 813-77-4, Dimethyl chlorophosphate
RL: RCT (Reactant)
(phosphorylation by, of calixarene derivs.)

IT 74568-07-3
RL: RCT (Reactant)
(phosphorylation of, by di-Et chlorophosphate)

IT 145237-43-0P 145237-45-2P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and alkylation by dimethylchloroacetamide)

IT 145237-41-8P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and cadmium complexing properties in FET)

IT 145237-31-6P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and copper-complexing properties and FET)

IT 145237-28-1P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and dephosphorylation of)

IT 145237-46-3P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and lead complexing properties in FET)

IT 145237-36-1P 145237-38-3P 145237-40-7P 145237-42-9P 145280-28-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and reaction with Lawesson's reagent)

IT 145237-34-9P **145307-27-3P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and reaction with sodium diethyldithiocarbamate)

IT 137693-26-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and reactions of)

IT 97600-39-0P 145237-32-7P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and redn. by lithium aluminum hydride)

IT 145237-26-9P 145237-27-0P 145237-30-5P 145237-35-0P 145237-37-2P
145237-39-4P 145237-44-1P
RL: SPN (Synthetic preparation); PREP (Preparation)

IT (prepn. of)
 145237-25-8P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (prepn., alkylation by chloroethyl Me sulfide, and its silver
 complexing properties in FET)

IT 145237-33-8P **145307-26-2P**
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
 (prepn., tosylation, and alkylation by dimethylchloroacetamide)

IT 148-18-5
 RL: RCT (Reactant)
 (reaction of, with calixarene tosylated derivs.)

IT 19172-47-5, Lawesson's reagent
 RL: RCT (Reactant)
 (sulfuration by, of hydroxy calixarene derivs.)

=> file uspatall

COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	34.94	92.17
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE	TOTAL
	ENTRY	SESSION
CA SUBSCRIBER PRICE	-8.26	-8.26

FILE 'USPATFULL' ENTERED AT 13:07:54 ON 23 JAN 2002
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FILE 'USPAT2' ENTERED AT 13:07:54 ON 23 JAN 2002
 CA INDEXING COPYRIGHT (C) 2002 AMERICAN CHEMICAL SOCIETY (ACS)

=> s l2
 L8 2 L2

=> d pn,ab,kwic 1-2

L8 ANSWER 1 OF 2 USPATFULL
 PI US 6326394 B1 20011204
 WO 9900394 19990107
 AB A cyclic compound of formula (I) ##STR1##

wherein R.sup.x groups which may be the same or different are selected from --O--(CH.sub.2).sub.n --O-- where n is an integer of from 2-6; R.sup.y and R.sup.z groups which may be the same or different are independently selected from hydrogen, halogen or a hydrocarbyl group; R.sup.a together with R.sup.b of the adjacent phenyl ring and R.sup.c together with R.sup.d of the adjacent phenyl ring form a group of formula --(CH.sub.2).sub.m -- or --(CH.sub.2).sub.p --O-- where m and p are integers of from 1-5, and each group R.sup.a -R.sup.b and R.sup.c -R.sup.d may be the same or different; and x is an integer of 2 or more, such as 4. Compounds of formula (I) display particular selectivity for specific ions such as potassium ions. They are useful inter alia in reactions where scavenging of a specific cation is required or as ion specific electrodes.

IT 60705-62-6 **145307-27-3**
 (prepn. of calixarene tubes as cation receptors)

L8 ANSWER 2 OF 2 USPATFULL
 PI US 6316268 B1 20011113
 WO 9822795 19980528
 AB An article of manufacture is provided including a substrate having an oxide surface layer and a layer of a cyclodextrin derivative chemically bonded to said substrate, said layer of a cyclodextrin derivative adapted for the inclusion of selected compounds, e.g., nitro-containing organic compounds, therewith. Such an article can be a chemical microsensor capable of detecting a resultant mass change from inclusion of the nitro-containing organic compound.

IT 60786-23-4P, Heptakis(2-O-methyl)-.beta.-cyclodextrin 123154-93-8P,
Hexakis(2-O-methyl)-.alpha.-cyclodextrin 123155-01-1P 123155-05-5P,
Heptakis(2,3-di-O-methyl)-.beta.-cyclodextrin 123155-20-4P,
Heptakis(2-O-benzyl)-.beta.-cyclodextrin **145307-26-2P**
161178-32-1P 161636-48-2P, Heptakis(2,3-di-O-benzyl)-.beta.-
cyclodextrin 207395-12-8P
(nitro-contg. org. compds. detection in environment by sensor with
oxide layer and layer of cyclodextrin deriv. chem. bonded to substrate
and adapted for inclusion of selected compds.)

=> d his

(FILE 'HOME' ENTERED AT 13:03:07 ON 23 JAN 2002)

FILE 'REGISTRY' ENTERED AT 13:03:14 ON 23 JAN 2002

L1 56 S CALIX AND HYDROXY NOT 8
L2 2 S CALIX AND ETHANOL
L3 0 S CALIX AND METHANOL
L4 0 S CALIX AND PROPANOL
L5 0 S CALIX AND ANOL
L6 145 S CALIX AND OL

FILE 'CA' ENTERED AT 13:06:54 ON 23 JAN 2002

L7 14 S L2

FILE 'USPATFULL, USPAT2' ENTERED AT 13:07:54 ON 23 JAN 2002

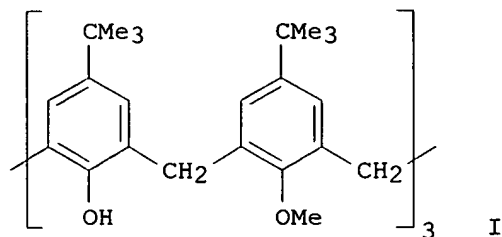
L8 2 S L2

=> log y

COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	5.66	97.83
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE	TOTAL
	ENTRY	SESSION
CA SUBSCRIBER PRICE	0.00	-8.26

STN INTERNATIONAL LOGOFF AT 13:08:17 ON 23 JAN 2002

L7 ANSWER 13 OF 14 CA COPYRIGHT 2002 ACS
 AN 123:9104 CA
 TI Synthesis and Structural Characterization of Calix[4]arenes,
 Calix[6]arenes, and Calix[8]arenes with 3-Hydroxypropoxy or
 2-Hydroxyethoxy Functional Groups Appended onto the Lower Rim
 AU Moran, Justin K.; Georgiev, Emil M.; Yordanov, Alex T.; Mague, Joel T.;
 Roundhill, D. Max
 CS Department of Chemistry, Tulane University, New Orleans, LA, 70118, USA
 SO J. Org. Chem. (1994), 59(20), 5990-8
 CODEN: JOCEAH; ISSN: 0022-3263
 DT Journal
 LA English
 CC 25-7 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
 Section cross-reference(s): 75
 GI



AB The compd. 5,11,17,23,29,35-hexa-tert-butyl-37,39,41-trihydroxy-38,40,42-trimethoxycalix[6]arene (I) has been prep'd. by treating 5,11,17,23,29,35-hexa-tert-butylcalix[6]arene with potassium carbonate, followed by Me p-toluenesulfonate. The analogous reaction with the unsubstituted calix[6]arene gives 37,38,39-trihydroxy-40,41,42-trimethoxycalix[6]arene (II). Treating I or 5,11,17,23-tetra-tert-butyl-25,27-dihydroxy-26,28-dimethoxycalix[4]arene with sodium hydride, followed by allyl bromide, gives 5,11,17,23,29,35-hexa-tert-butyl-37,39,41-tris(allyloxy)-38,40,42-trimethoxycalix[6]arene (III) or 5,11,17,23-tetra-tert-butyl-25,27-bis(allyloxy)-26,28-dimethoxycalix[4]arene (IV), resp. III and IV react with BH₃, followed by H₂O₂, to give 5,11,17,23,29,35-hexa-tert-butyl-37,39,41-tris(3-hydroxypropoxy)-38,40,42-trimethoxycalix[6]arene and 5,11,17,23-tetra-tert-butyl-25,27-bis(3-hydroxypropoxy)-26,28-dimethoxycalix[4]arene, resp. A general procedure for the synthesis of 2-hydroxyethoxy-substituted calixarenes involves redn. of the corresponding Et calixaryl acetates with LiAlH₄. The procedure has been used to synthesize 5,11,17,23-tetra-tert-butyl-25,26,27,28-tetrakis(2-hydroxyethoxy)calixarene, 25,26,27,28-tetra(2-hydroxyethoxy)calix[4]arene (V), 5,11,17,23,29,35-hexa-tert-butyl-37,38,39,40,41,42-hexakis(2-hydroxyethoxy)calix[6]arene (VI), 37,38,39,40,41,42-hexa(2-hydroxyethoxy)calix[6]arene, 5,11,17,23,29,35,41,47-octa-tert-butyl-49,50,51,52,53,54,55,56-octakis(2-hydroxyethoxy)calix[8]arene, and 49,50,51,52,53,54,55,56-octakis(2-hydroxyethoxy)calix[8]arene. Compds. II, III, IV, V, and VI have been characterized by x-ray crystallog. The conformations of the tetrols, hexols, and octols have been computationally explored using mol. mechanics calcs.

ST calixarene hydroxyalkoxy deriv prepn x ray; conformation calixarene polyol
 mol mechanics; crystal structure calixarene hydroxyalkoxy deriv

IT Conformation and Conformers
 Crystal structure
 Molecular mechanics
 Molecular structure
 (of calixarene hydroxyalkoxy derivs.)

IT 122406-45-5
 RL: RCT (Reactant)
 (allylation of)

IT 78092-53-2 96107-95-8

RL: RCT (Reactant)
(methylation of)

IT 138709-55-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and allylation of)

IT 145307-26-2P 163836-80-4P 163836-81-5P 163836-82-6P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and mol. mechanics calcns. for)

IT 149507-83-5P 163836-76-8P 163836-77-9P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)

IT 156746-92-8P 163836-75-7P
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP
(Preparation)
(prepn., x-ray anal., and hydroboration-oxidn. of)

IT 163836-78-0P 163836-79-1P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn., x-ray anal., and mol. mechanics calcns. for)

IT 92003-62-8 92003-63-9 97600-39-0 97600-43-6 97600-45-8
97600-47-0
RL: RCT (Reactant)
(redn. of)